



VOL. XXIV, No. 5

Motor Boat Racing, Past, Present and Future.....	7- 9
Columbia Yacht Club Resumes Pre-War Racing.....	10-11
How the Chasers Got Their Gas.....	12-14
Cruise Races of the Delaware River Folk.....	15-16
New Hacker Runabout for Movie Boatman.....	17
Flags—Why and Why Not.....	18
Useful Compass Courses on Western End of Long Island Sound.....	19
The Final Ocean Race of the Season.....	20-21
Small Motor Boats—Their Care, Construction and Equipment.....	22-27
Prize Question No. 1: Spare-Time Occu- pations During the Lay-Up Period.....	22-23
Prize Question No. 2: What To Do When Your Motor Stops Suddenly.....	24-26
Prize Question No. 3: Valve-Tapped Ad- justments.....	26-27
Starting Correctly to Build—VI—Methods of Planking and Caulking the Hull.....	28-30
How Fast Can A Runabout Go?.....	31-32
Murelett an 85-Foot Houseboat.....	33
My Ideal Auxiliary No. 10, Indrashama, a 35-Foot Schooner.....	34-36
From Chicago to the Sea De Luxe.....	37
J. V. B. Engine.....	38
Yard and Shop.....	39-40

MoToR BoatinG regrets that labor conditions in the printing industry over which we have no control have made it necessary to keep our many readers waiting for this issue. On October first an outlaw strike which was not sanctioned by the International Union was called which left us without pressmen or compositors.

On November fourth, after waiting five weeks for the printers to return we decided to have MoToR BoatinG printed outside of New York City. Credit for publishing this November issue goes to the Haywood Publishing Co., of LaFayette, Ind., who have completed the issue in record time and made it possible to put copies into our readers' hands even sooner than we had anticipated.—EDITOR.

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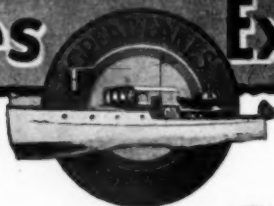
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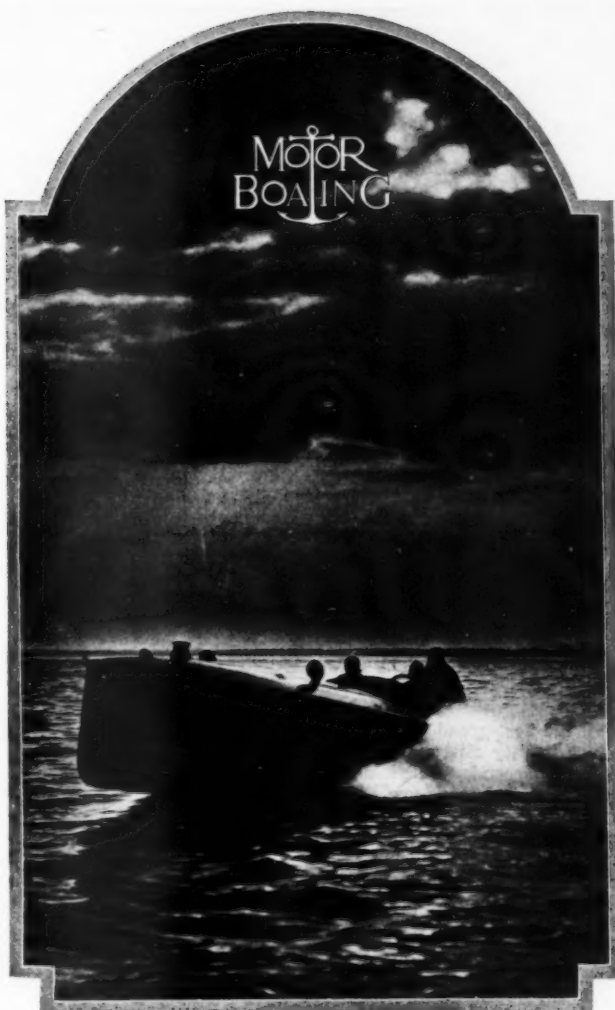
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MOTOR BOATING



Heldena, formerly Kiotta III, powered with a Van Blerck motor, A. P. B. A. displacement champion.

Motor Boat Racing Past Present and Future

A Review of the Events of the Past Season
A Comparison with Former Years
and a Look Into the Future

By Charles F. Chapman

FROM every indication we are upon the eve of the greatest development in marine engines that the marine industry has ever known. An analysis of the results of the past year's racing events conclusively proves this. Racing, heretofore looked upon simply as a "game," will without doubt in the future provide the arena for the exploitation and development of the ideas of the engine manufacturers. The American Power-Boat Association and its member yacht clubs can aid greatly by providing contests but it comes back to the engine manufacturers themselves to recognize and adopt the best features possible in their power plants if they are to live and succeed.

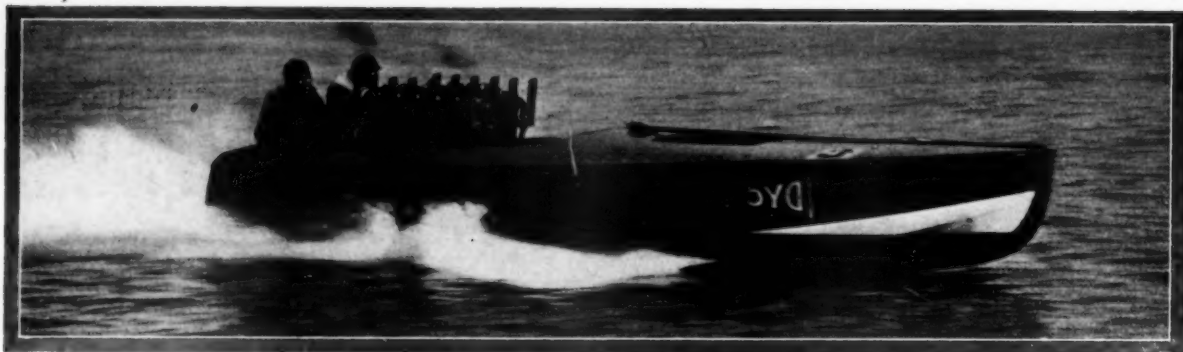
Most racing in the past has been condemned, perhaps not unjustly, because of its disappointments to spectators, its cost, its mishaps and on account of its almost certain number of break-downs on the part of the competing boats. It is true that hydroplane racing has been a disappointment but more of these disappointments can be attributed to the power plants than to the hulls, but even in spite of these break-downs, disappointments, etc., much good has been accomplished in the development of these contests through the weakness shown. As Commodore Judson of the American Power-Boat Association most correctly points out later in this article, the fact that the motive power has been strained to the breaking point by the extreme tests to which they have been put to produce the "fastest boat in the world," made it possible to determine where this "breaking point" was. Surely, continues Commodore Judson, this could have been accomplished in no other way or by any other means, as we have had engines which have stood all kinds of block tests without failure and the failure point has appeared only

when installed in the boat and put to the test in a gruelling race. If these points of failure have been disclosed in this way, has racing not been of some benefit to the industry and aided in producing a motor which will be of the greatest service to the motor boatman and yachtman?

While motor boat racing has not been so generally indulged in during the past season by all classes of boats and boatmen as it was a few years previous to the war, yet the events which have taken place have been of a much healthier sort and more of real racing events than the hippodroming of previous years. Furthermore, the results of this year's racing have been watched with more interest than ever before by both laymen and the marine engine industry.

Premier speed honors this year go to Miss Detroit III, owned by G. A. Wood of Detroit. Her best speed of the year was made in the second heat of the Thousand Island races when she averaged just 58.0 miles an hour in the 33.06 mile race. In one lap of 11.3 miles in this race, Miss Detroit III averaged 60.7 miles per hour, the best speed ever made by any boat in competition. In the other two heats of the Thousand Island races, Miss Detroit III showed an average speed of 50.42 and 53.75 miles an hour.

The Gold Cup race of 1919 developed nothing in the line of new speed records due principally to the shortness of the course, only 2½ miles to the lap, and the fact that there was no real competition. The fastest of the three thirty-mile heats was run at a speed of 55 miles an hour, the other two heats showing speeds of 43.3 and 30 miles per hour respectively. The fastest 2½-mile lap was covered at the rate of 58½ miles per hour. The winner's



Miss Detroit III, the champion of the year. Her best speed was 60.7 miles per hour, made at the Thousand Islands

average speed for the entire race of 90 miles was only 40.2 m.p.h.

Compared with other years, the speed made in the 1919 race was slow. For 90 miles it was the slowest since 1915. For one lap the record made by Miss Detroit I at Minneapolis in 1917 of 59.43 miles an hour still stands as does the best speed of 56.5 m.p.h. for a 30-mile heat made by the same boat at the same place. It is an interesting fact that the fastest speeds, for lap, heat and entire Gold Cup race were made by a boat powered with a Sterling marine motor.

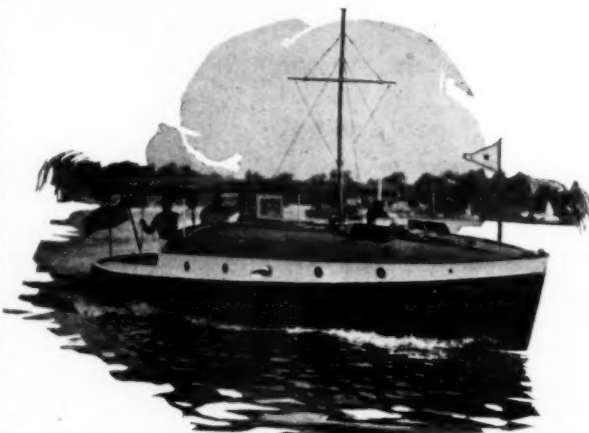
No race for the One-Mile Championship was held this year, therefore the record of 63.498 miles per hour made by Whip-po'-Will Jr. in 1918 still stands.

In the displacement racer class the best speed was made by Hoosier IV at Miami, Florida. Twenty miles were covered by this boat in 40 minutes, 32 seconds, which is at the rate of 29.6 miles per hour, although Helden II, a displacement boat powered with a Van Blerck motor competing with the hydroplanes at Toronto showed a speed of 32.4 miles in the first 30-mile heat of the race for the Canadian International Gold Challenge Trophy. The record to date is held by Kiotta III at the Thousand Island races in 1917 when she averaged 33.06 miles an hour in a 33-mile race.

In several impromptu races at Detroit during the Gold Cup races, 'NEverthin', a Hacker displacement runabout powered with a 6-cylindrical Hall-Scott marine motor showed a speed slightly in excess of 36 miles an hour for 10 miles around the 2½ mile course which is extremely good, in fact, better than any speed heretofore made in competition for this type of craft. However, the races were not regular sanctioned affairs although the speed was made over a certified course and the times were taken by official American Power-Boat Association timers. Yet this boat carried a crew of only one man while the rules particularly stipulate that the crew shall consist of not less than two persons. This does not in any sense infer that 'NEverthin' is not the fastest displacement boat of the year for we believe she could show 40 miles an hour on a straightaway. Nurse, another displacement craft powered with a 12-cylinder Liberty motor and owned by G. A. Wood, was also very fast and is credited with a speed of 54 miles an hour, but this figure is unofficial.

In the cruiser classes, Victory II on Long Island Sound and Pickinenny on the Delaware seem to have cleaned up all prizes in sight. The former boat won the race of the New York Athletic Club to Block Island, the ocean race of the Tamaqua Yacht Club and besides, several minor events. Pickinenny won the Championship of the Delaware and the Record Trophy races, events of 102 and 57 nautical miles in length respectively.

On the Great Lakes, the Scripps Trophy was won by Josephine against a field of twenty-four starters. This race was 112 miles in length and proved a most popular contest. Brenda II took the 190 mile New Orleans-Pensacola grind and Commodore Vaughan's Maybelle V returned a winner in the revival of the New York Motor Boat Club's 270 mile race from New York to Albany and return. Gar-



Pickinenny, Cruiser Champion of the Delaware River



Gar Jr., a speed cruiser which makes 36 miles per hour

denia finished the winner in Class A of the ocean race from New York to Block Island, but was beaten later in the season by Adelew, owned by F. L. Salomon of the Rockaway Park Yacht Club.

A complete summary of the racing events of the year as well as a comparison with those of other years will be found in the next issue of MoToR BoatinG.

Considering the results of this season's events from all angles, one must agree that they have been most encouraging. Although conditions were such that few if any new boats were possible this season, yet interest in racing has been keen. With new boats a certainty for the 1920 season,

plans are already being made for the major events. Several challenges are already in for the Gold Cup races: four or five boats are building to compete for the trophy offered by Carl G. Fisher for the Displacement Boat Championship of North America; Gar Wood has again challenged the British for a race in England for the Harmsworth International Trophy, although to date the yachtsmen on the other side of the ocean have taken no more notice of the challenge than they did of the one sent over last spring; an ocean race for cruisers from New York to Bermuda seems a probability as the Columbia Yacht Club of New York City has offered a trophy, and the Mississippi River enthusiasts have already placed their order for several new craft for their annual Fourth of July races which are scheduled for Burlington next year.

With all this activity for 1920 there are many who believe motor boat racing should be modified and directed along saner and safer lines so as to aid in the development of a more wholesome type of boats. There are many enthusiasts who advocate the abandoning of hydroplane racing altogether. There are others who oppose such a step most strenuously. These claim that no matter how unsatisfactory hydroplane racing may be from many standpoints yet it serves its purpose. They argue that the person will always exist who desires to own the fastest boat in the world and although the number of such persons will always be limited yet the hydroplane is the only means of satisfying this desire.

The whole status of the racing situation is one which is constantly changing. What was good practice yesterday may be obsolete today. Developments in power plants and hulls during the next few years is to be rapid if not startling. Mechanism which the war developed in other fields must be taken advantage of and applied in ours. The Liberty motor, while totally unsuited for marine use in its present state, yet it has many, many features which could be applied to marine motors to advantage. The manufac-

turer who first sees their possibilities and adds them to his motors may reap a fortune.

To give our readers the consensus of opinion as to the future of hydroplane and other racing, we print below a number of letters from eminent authorities stating their own personal views on this most important subject.

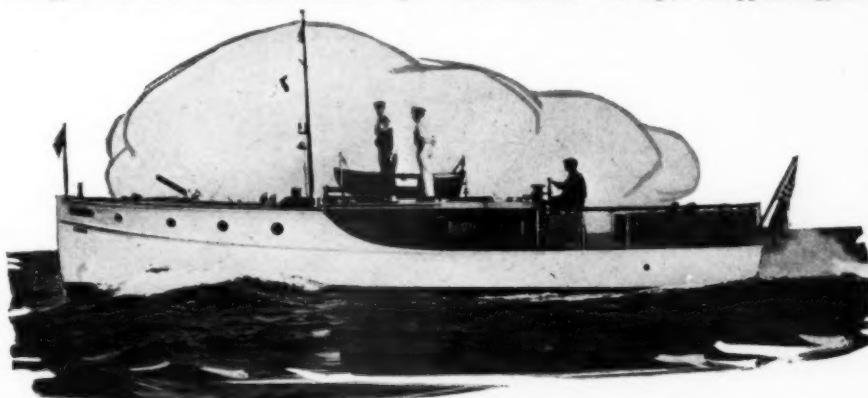
(Letter from M. E. Mutchler, Advertising Manager of Sterling Engine Co.)

We believe that hydroplane racing with its many dangerous mishaps, its costliness and withal the many thousands of persons who go home from one of these fizzles, disappointed; these are sufficient reasons why hydroplane racing should be abandoned, and here at the Sterling, we believe that the Carl Fisher Trophy is the one means by which the most good could be accomplished in abandoning the hydroplane. The Fisher Trophy will do for the marine industry just what the eliminating of special racing cars did for the automobile industry.

(Letter from Commodore Judson, President of the American Power-Boat Association, in reply to Mr. Mutchler.)

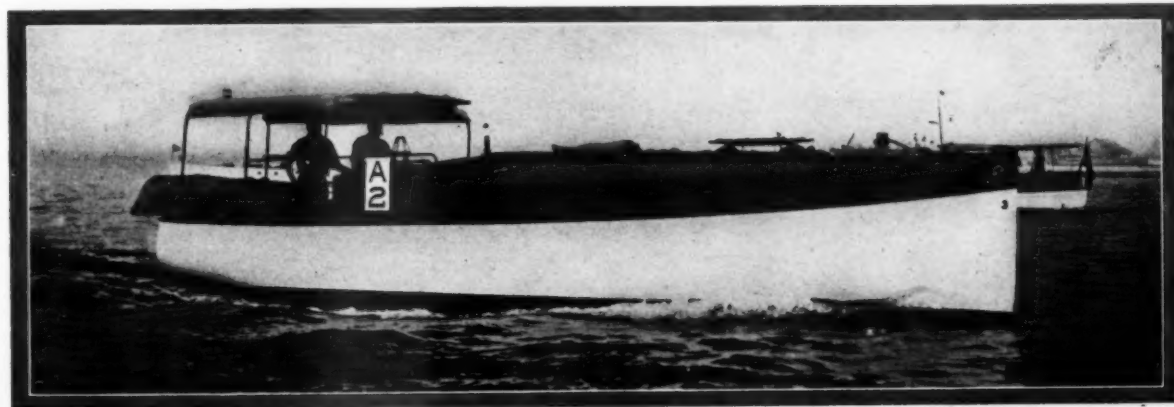
As regards your statement about hydroplane racing being doomed to "die a natural death", I suppose we will have to wait for these obsequies to occur from that cause. I do not believe the American Power-Boat Association could take any effective action to stop these races at the present time. So long as there remains a desire on the part of some men to own the "fastest boat in the world", there will always be a demand for this class of racing in my opinion. The fastest boat in the world cannot obviously be other than a hydroplane, as no boat could be driven through the water at a speed equal to one travelling on top of it, and apparently the hydroplane construction is the only form yet devised which will accomplish this purpose.

I agree with you, and my conclusion is based on a number of years of disappointing experiences, that hydroplane racing is disappointing, not only to the average owner and builder of such contrivances, but to the spectator, on account of the almost certain number of breakdowns, failures and accidents on the part of competing boats, which seem to be a necessary adjunct to such competition. More of these disappointments and accidents are attributable to failure on the part of the engine and not of the hull and even with these breakdowns of the motor equipment, I believe that much good has been accomplished in the develop-

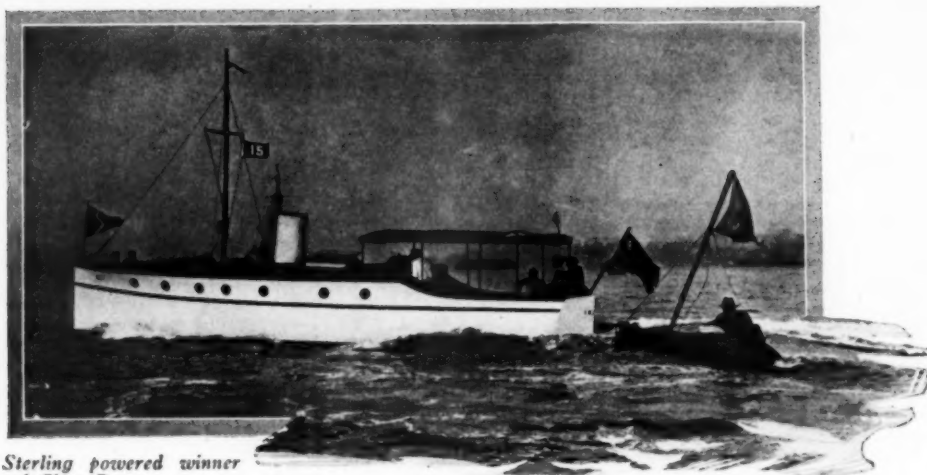


Adelew, Cruiser Champion of New York Bay, over 38 Feet

(Continued on page 84)



Victory II, Sterling powered, Cruiser Champion of Long Island Sound



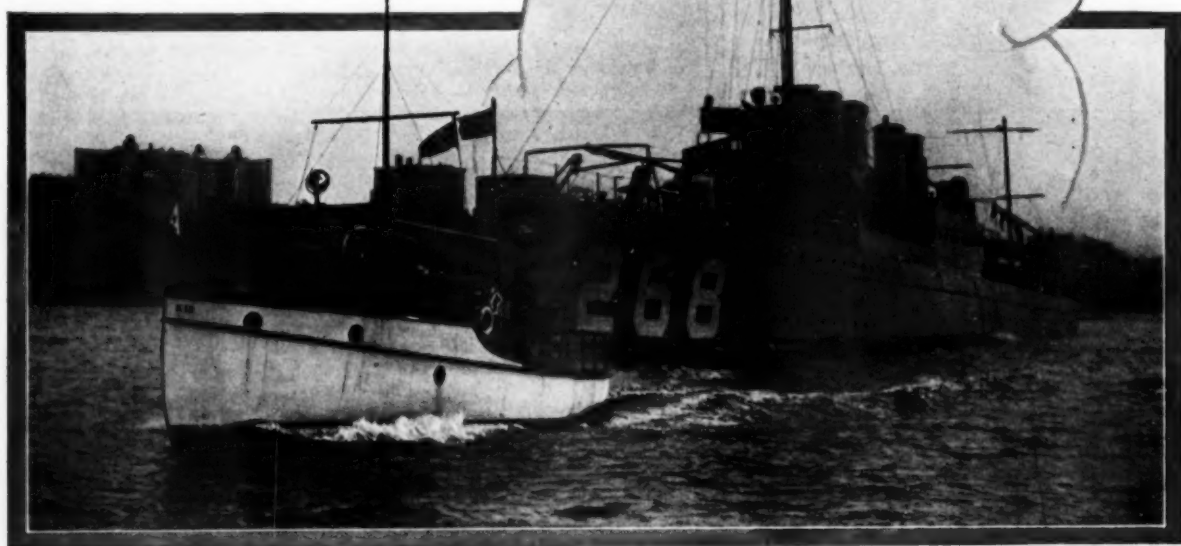
Champ, the Sterling powered winner of Class B

Columbia Yacht Club Resumes Pre-War Racing

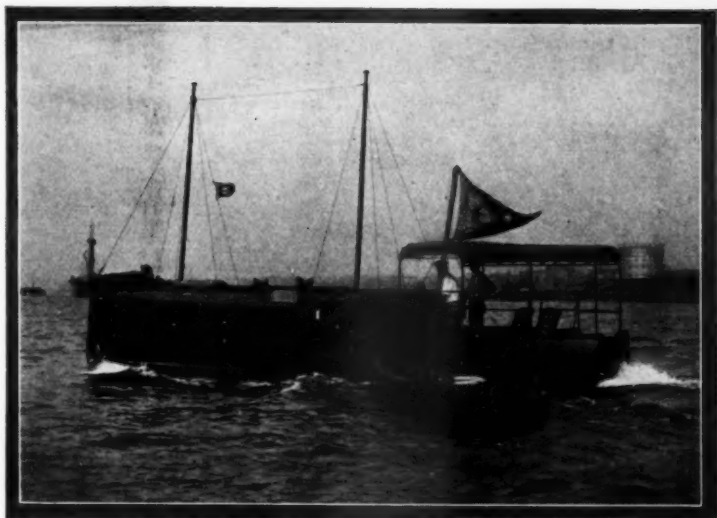
Entry List Well Filled with Excellent Craft—Events Under American Power-Boat Association Rules and a Free for All Chance Race

RACING on the Hudson River has been dead since previous to the war. While several Hudson River boats have been competing in other localities this summer, yet no Club on the river seemed to care to take it upon themselves to try to revive the sport locally. So the Race Committee of the Columbia Yacht Club believing that races scheduled this Fall would be popular, suggested that the experiment be tried. Although the date was late—October 11th—and there were only two weeks to arrange all the details before the closing of the yachting season, yet they succeeded in getting 34 entries for the three classes of which a large proportion started.

Of the two handicap classes under American Power-Boat Association rules, Class A for boats of less than 38 feet in length, proved the most popular, 8 boats in this class crossing the starting line. Turtle, owned by Thomas Farmer, a sister hull to Victory II but powered with a two-cylinder Twentieth Cen-



Kodak, which lost first place in Class A by only 35 seconds



Turtle of the Columbia Yacht Club, winner of first prize in Class A

tury motor, proved the winner over Kodak by 35 seconds although she had to fight it out over every inch of the ten mile course. In Class B for larger boats, Champ, owned by William Bond of the Tamaqua Yacht Club, finished first on corrected time.

The third race of the day was a novel affair known as a Chance race. This race was run without handicaps but every boat had a chance to win a prize. This class was open to all types and sizes of boats. All boats started together and went three

Viewing the racing aboard Commodore Harris' flagship Greyhound



The Race Committee: C. F. Chapman, Chairman; J. H. Hallberg and Rear Commodore C. H. Moore of the Columbia Yacht Club.

she won second prize. First prize was taken by Toko which finished second; third prize was drawn by Kodak which finished sixth, and fourth prize was won by Turtle which finished eighth.

**Columbia Yacht Club Fall Regatta—October 11, 1919.
Course 8.8 Nautical Miles
Class A—Cruisers Under 38 Feet L. W. L. Start 2:30**

BOAT	OWNER	RAT- ING	Elapsed Time	HAND- ICAP	Cor- rected Time	Position Won
Rosemary	C. Sherz	36.86	1-15-46	Scratch	1-15-46	6
Kodak	R. J. Haslinger	35.38	1-11-38	2-31	1-09-07	2
Mariposa	C. H. Moore	35.38		2-31	D. N. F.	
Blue Bird	H. E. Childs	34.77	1-16-44	3-36	1-13-08	5
Natalie II.	A. Nelson, Jr.	34.60	1-16-07	3-46	1-12-21	4
Sea Horse	J. F. Mallard	33.67		5-41	D. N. F.	
Falcon	P. W. Johns	33.64	1-17-16	5-53	1-11-23	3
Turtle	T. Farmer, Jr.	32.83	1-15-50	7-18	1-08-32	1

Class B—Cruisers Over 38 Feet L. W. L. Start 2:40

Rensli	J. A. Filsner	41.547	1-00-26	Scratch	1-00-26	1
Champ	W. Bond	38.51	1-01-54	4-09	0-57-45	2
Viva	A. Pettit	35.2		9-34		



How the Chasers Got Their Gas

The Experiences of Chaser Crews on the Long Voyage to the Submarine Zone
Problems of Fuelling and Provisioning at Sea Under Full Headway

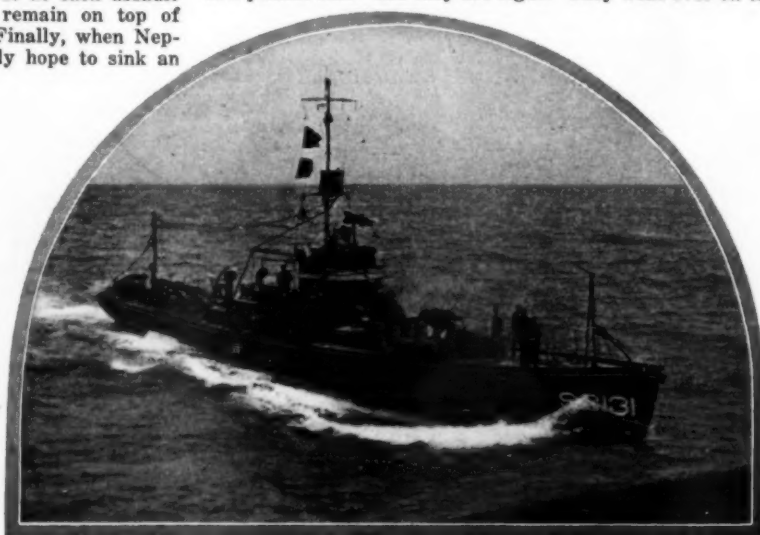
By Alfred F. Loomis

FATHER NEPTUNE has accustomed himself to many strange sights since man first essayed to navigate, but I imagine that it rather tickled his fancy during the latter part of the war to have convoy after convoy of submarine chasers sail across a 3,000-mile stretch of his domain to give combat to the German submarines. The chasers were so small compared with the immensity of the waves which he could kick up, and their crews so green that he couldn't forego the pleasure of giving the first two or three convoys a taste of sea life. Calling upon his old friend Aeolus to furnish the incidental music—a high plaintive wail through the guys and halliards of the chasers—he set about to break the sea into chunks and place large consignments of it on their narrow decks. They bucked and plunged and wallowed and coughed under the onslaughts of the elements, but at each assault their crews grew more determined to remain on top of the water and be of use to humanity. Finally, when Neptune saw that at the worst he could only hope to sink an occasional steam convoying vessel, he let 200 of the chasers, more or less, cross over to Europe.

So, for the last two years it has been no uncommon sight in the southerly trade routes to see a group of these little 110-foot boats chugging along under their own gasoline power, totally unmindful of the fact that the nearest land might be a thousand miles from them. I have often tried to put myself in the place of a passenger—a doughboy, say, aboard a transport—at the moment of sighting a convoy of chasers in midocean. Himself not yet accustomed to the tremendous vastness of the sea, he must have wondered what manner of madman it was who would trust his carcass in a craft that, on the horizon, looks no larger than a piece of driftwood, and that responds to the movements of the waves like a cockleshell in a bathtub. Then,

as the convoy approached and it became evident that there were dozens of the little things ploughing doggedly along, their crews waving an offhand greeting as they passed, he must have asked himself how they lived and how they stood it, with no hot chow, nor dry bunks, nor African golf to break the tedium of the long voyage. Summing up all his impressions, he might have thanked his lucky stars that he had chosen a nice quiet billet like the front line trenches as his part of the war.

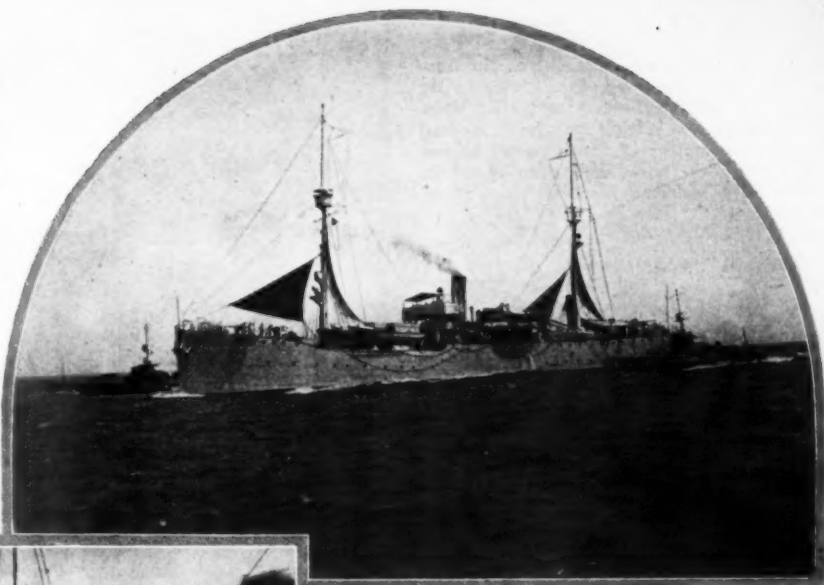
If I am right in assuming that this eyewitness asked himself how the chasers could cross the pond, it is within reason to suppose that others who know of the little craft only by reputation will be interested in the answer. Those hundreds of MoToR Boating's readers who are themselves ex-chaser men will say that it was no trick at all, crossing the ocean in a peanut hull—and they are right. They went over on the



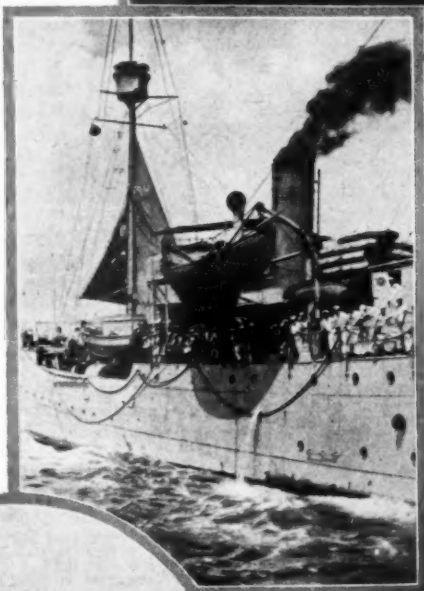
The 131 going alongside the *Leonidas* in mid-ocean to take on supplies. The flag hoist informs other chasers to disregard her movements

chasers because Uncle Sam thought that the subs had had their own way long enough, and they came back on them because they wanted to get home, and that's all there was to it. But there are interesting details in every undertaking.

The first convoy of American chasers left Bermuda on April 8, 1918, with the U. S. S. Leonidas as flagship and various tugs as towing vessels, and in that convoy it was considered no disgrace to take a towline. In fact, towing was part of the programme, and each chaser took a line one day in three to give the engineers opportunity to go over its power plant. When one of the conveying vessels broke down—as occasionally happened—the flotilla stopped and advantage was taken of the delay to feed the ravenous crews aboard the chasers. The Leonidas lowered her whaleboats, and the state of the sea being zero in the Beaufort scale, they peddled dry stores and fresh provisions among the fleet like bumboats in a harbor. When it came time to fuel the chasers, the accompanying tanker reduced her speed to four knots and the little boats went



Chasers leaving starboard side and coming to port quarter of U. S. S. Leonidas for provisions



Lowering a basket of provisions from mother ship to chaser. Speed cone shows full speed is being maintained



Three chasers fuelling at full speed from the tanker Chestnut Hill

alongside and astern and received their gasoline through lengths of rubber hose. Then, having lost some gas and much time, they overtook the convoy, and their commanding officers offered up a hopeful prayer that they'd never have to do that job again. But their message to the Deity was not always expressed in the form of an invocation.

Proceeding in this fashion the convoy was fourteen days in reaching the island of San Miguel in the Azores, and it had not arrived before a second group under the scout cruiser Salem took its departure from Bermuda. In this outfit towing was the exception rather than the rule (for it had been discovered that neither the chasers nor their crews were chronically subject to break-downs), and the Salem hustled her flock along at a speedier clip, increasing the fuelling speed a trifle and provisioning them (when it was thought necessary) underway. The run was made in twelve rather uneventful days, and the chasers arrived in Ponta Delgada in time to accompany the Leonidas to Corfu, Greece. The third convoy, starting a month later under leadership of the U. S. S. Prairie, made the most considerable leg of the voyage in eleven days, having profited by the experience of its predecessors.

In like manner other American chasers to the total number of 134 crossed from the States to European waters, the last convoy arriving in Gibraltar a few days before the signing of the armistice. Having nothing to do it sailed home again, but, in accordance with the biblical principle that the last shall be first and the first shall be last, the Adriatic and the Plymouth chasers stayed to settle up little difficulties north and south of Europe's coastline. Those of us who didn't reach home until the end of August considered ourselves the last American convoy of the war, but it now appears that the couple of dozen chasers left on duty with the mine-sweeping fleet in the North Sea will make the homeward voyage despite November weather.

It would be hard to find a basis of comparison between the first convoy to go over and the one in which we returned, despite the fact that the mother ship was the same, and that more than half of the Leonidas's first flock was included in this homeward-bound flotilla. Perhaps fifty per cent. of the crews were identical, and yet the men and the chasers of last year were as different from those of three months ago as iron is from refined steel. The personnel had been forged and hardened in twelve months of foreign service, and it had rung true under a hundred blows of the war's hammer. If there was a situation in barrage, convoy, and detached duty that hadn't already arisen the chaser officers had no dread of meeting it, for they had long since found themselves and learned the reliability of their craft and crews. Officers and men were the finished product of

chaser experience, and whereas at the outset we had considered the transatlantic voyage as half the battle, we looked upon it, on the day of setting sail from Lisbon, merely as a matter of routine-days at sea that would otherwise have been spent in port, with a welcome home at the end of them.

When we gathered at the capital of Portugal in the early days of July we numbered twenty-six chasers, two tugs, the tanker Chestnut Hill, and the mother ships Leonidas and Hannibal. We had been assembled from Inverness, Brest, Constantinople, and ports in Italy and Dalmatia, and we were all "rarin' to go." Collectively, and even as individuals, we had covered more of Europe than the average tourist does, and there was just one other country that we desired to see.

After waiting until the 19th of July we shoved off with homeward-bound pennants flying, giving the Hannibal seven hours start so that she wouldn't impede the progress of the convoy. As a speed queen she couldn't compare with her sister ship Leonidas, being unable to extract from her boilers that extra half knot that put the Leo out of the 8-knot class. But with all sail set she surpassed herself and at the end of four days running arrived at Ponta Delgada a good three hours ahead of us. On a run of this short duration there is no necessity for a chaser to refuel, and we proceeded without other incident than that attendant upon a heavy fog which closed down the first night out. And of that I can give no testimony as I had the watch below and heard only through my dreams the whistled call letters of the escort vessels.

Stopping for five days at the Azores to refill our oil, gas, and water tanks and to overhaul our engines, we got underway on the morning of July 29 and put out into a smooth sea for Bermuda. To extract the least annoyance from an extended cruise on a submarine chaser it is necessary to relapse into a waking coma in which one takes no account of contemporary hardships and lives only for the good sleep at the end of it. For a four-day journey, starting on Monday, I would set my mental alarm clock for the following Thursday and manage to struggle through the intervening days without committing mayhem. The same applied to the ten-day run between the Azores and Bermuda, but I have a feeling that had the cruise extended a day beyond my expectations I should have begun by bawling out the quartermasters and ended by boiling the cook in his own stew pot. There is a limit to human endurance.

On the second night from port the Leonidas sent out a cornet to all chasers ordering them to turn in lists of what



Getting ready to shoot the sun. The chaser navigator must also be an acrobat



Taking advantage of a fair wind. The exhaust spray wets everything on deck

they needed in the way of fresh meat and bread. On the 131, as I remember it, we asked for twenty-five pounds of beef and fifty pounds of bread, and the other chasers requested similar quantities. All but one, whose commanding officer stated that he needed no provisions. A short while later there came an official message to him over the telephone in which he was commended for so conducting his commissary department that after two days at sea he needed no fresh stores. The message concluded with the prophecy that he would have a successful career on his retirement from the Navy. This message, as radio messages always were, was picked up by the other chasers and furnished some of us with food for thought. If, as appeared, it was a bona fide congratulatory message, it was also a reprimand for the rest of us. But it may have been sarcasm, since it is impossible to keep more than a two-days' supply of ice or fresh meat on a chaser. Whatever the intent of the message, stores were not issued until

the second day following, when we received orders to go to the Leonidas and Hannibal in alphabetical order.

This was our first experience in receiving provisions when under way at standard speed, but both mother ships had tried out the system with a previous convoy, and it had worked without a hitch. The machinery of feeding the chasers consisted of a whip tackle rove from the main yardarm of the mother ship, its hauling part leading down to a snatch block on deck and forward so that the deckhands might tail on and run away with the provision basket secured to the other end of the line. One of these tackles was rigged to each yardarm, and with the falls clear and the wicker basket loaded, preparations were complete for provisioning the flotilla.

The chasers then formed in double column astern of the mother ship, and upon signal the leading boat of each column ranged alongside and manipulated her course and speed to stand off about fifty feet from the ship's side and abreast of her quarter deck. A heaving line, the bitter end of which was attached to the basket, was passed to the chaser and when it had been caught the hands on the mother ship ran away with their line and raised the basket to a height of 20 or 30 feet above the deck. They then slacked off slowly as the men on the chaser hauled in on the heaving line, and it was only a matter of seconds before the basket had described an inverted arc through the air and was safe and dry on the deck of the chaser. Reversing the process, the empty basket was returned, the end of the heaving line being hauled in when the basket was again aboard the mother ship. The chaser increased her speed to resume position in formation, and the next two in line came up on their respective sides to draw their stores.

Simple as this method of provisioning was, it yet had its difficulties, and it called forth excellent steering by the chaser quartermaster and a cool head and quick judgment from the commanding officer. The executive officer was privileged to stand on the bridge, look wise, and snap photos of the operation, but the skipper had to keep his

Cruise Races of the Delaware River Folk

How the Race and the Cruise are Combined to Yield
a Maximum of Enjoyment to all Participants



Start for a cruise-race on Chesapeake Bay

COMBINING the cruise with the race, or the race with the cruise, is steadily gaining favor with the Delaware River folks, especially those who are enthusiastic in both branches of the sport. The popularity of combining the two features of yachting is attested by the increased number of boats taking part in the annual Chesapeake cruises, and the interest taken in the meetings of any kind which has anything to do with the cruise and races combined.

The most striking evidence of this was the recent "night ashore" at the Riverside Yacht Club at Essington-on-the-Delaware, one week following the end of the club's annual cruise to the Chesapeake, and on which night the prizes won were dealt out.

The recent cruise of the Riverside Yacht Club on the Chesapeake was held during the period from August 9 to 17 inclusive. As a matter of fact most of the party did not return home until the day following, and some prolonged the stay for a week longer.

During the cruise week five races were held, the five courses aggregating a total of 81.4 miles. There were twenty-five boats with the cruise party during part of the time. Some eighteen boats made the entire trip. Some remained the greater part of the week and then asked permission to leave the fleet to continue the cruise beyond the itinerary scheduled. Others prevented from starting with the cruise at the beginning, started later and joined the fleet at the first opportunity. For these varying reasons the entire number failed to make the entire cruise as scheduled.

Fifteen boats took part in the races, but three of them withdrew later in the week much on account of reasons given above. The races were run on handicap, according to A. P. B. A. rules, the prizes



Smooth sailing along the Chesapeake & Delaware Canal

Photographs by Joseph N. Pearce.



All locking through together at Chesapeake City

being awarded on the point system, that is, the boat making the highest number of points in the five races, (in each division) was awarded the first prize. There were three prizes in each division, 35 rating being the dividing line for the two divisions. Each boat was given a point for herself when finishing, and one for each boat defeated. A boat starting but not finishing

was considered a defeated boat, and gave a point to each boat finishing.

The first cruise and race week combined since motorboating came into fashion with Delaware River folks was held under the auspices of the Delaware River Yacht Racing Association four years ago. The itinerary included three races going down the bay and up the shore to Ocean City. An additional race meet between the cruise-party and the shore fleets was held as a part of the entertainment program at the Ocean City Yacht Club. This race held in 1916 was a marked success, and had not the World War broken out it probably would have been repeated in one way or another the following year.

In the meantime the Riverside Yacht Club was reorganized, and made progress in leaps and bounds to the extent that it became a distinctively cruising and racing club. In 1918 the club, many of whose members had taken part in the D. R. Y. R. A. cruise two years prior, staged its first cruise to the Chesapeake. Despite all the war troubles and the submarine scare, this cruise went down to the Chesapeake with 18 boats, 15 of which remained with the party over the entire course. So successful was that cruise and the races as well, that the membership of the club practically demanded a repeat, the result of which was the recent cruise and race week which was even more successful and delightful.

The experience of the Riverside cruise folks is interesting and by profiting by mistakes made the first year, the second cruise was more successful than the first. In using the word "mistakes" it should be explained that these were not serious matters, but merely such parts of the planning which experience taught could be improved



All ready for a quiet evening in Worton's Creek



An attractive portion of the Severn River near Annapolis

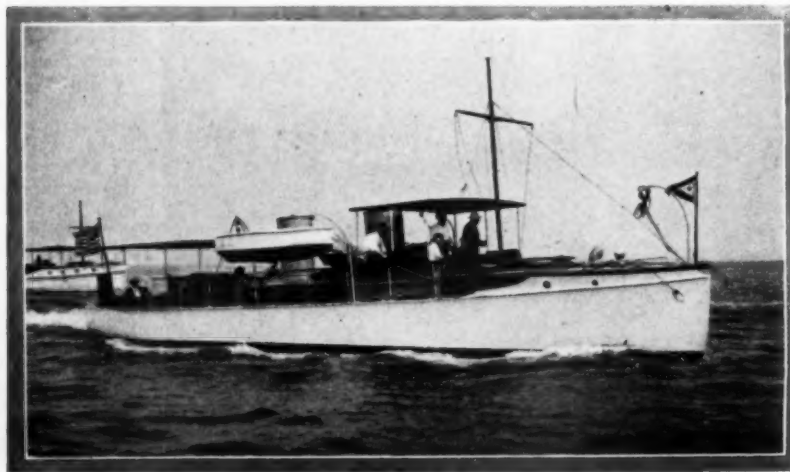
on to make the week on the Chesapeake the more enjoyable.

These cruises are planned with the greatest care, and much time and thought is given them during the winter months. Men familiar with the waters to be traversed and the points to be visited are consulted, the outcome of it all being that when the time rolls around every little detail is perfected, both as to cruise and races, and the itinerary is followed out to the letter. Should any changes become necessary, they are made in a manner so as to give the utmost satisfaction to all concerned.

During the 1918 cruise it soon became apparent that the grind was too hard. There was too much running, and the runs were of too long a distance, so that the folks became tired out, and failed to enjoy the side sports arranged at the several points of call. In the 1919 cruise the distances were cut to almost half which proved correspondingly more pleasurable and satisfactory.

In planning a club cruise such as the Riverside folks have now held for two years successively, an allowance should be made for a spare day to shift in on account of meeting with bad weather conditions. This feature in the making of the schedule this year proved its wisdom when the fleet was held up for a day at Annapolis on account of storm. How all this came about is a long story, but may bear the telling as a guide to others who may plan during the winter for such a cruise.

The original schedule was planned for a stop in Sillery Bay, on the Magothy River; two days up the Severn in Round Bay; and one day at Queenstown on the Chester River. By getting in touch with the townsfolk at Queenstown such a hearty welcome and a full day of entertainment was promised that it was deemed advisable to take a day off Round Bay and give it to Queenstown, making the latter a two-day stop. This again proved unsatisfactory to some, and finally two races planned were held in one day, cutting out Magothy River,



A typical Delaware river cruiser on the broad expanses of the Chesapeake

(Continued on page 60.)



Miss Los Angeles, the Hall-Scott powered Hacker runabout just delivered to Mr. Farnum

New Hacker Runabout for Movie Boatman

THERE has just been designed and completed at the Detroit shops of the John L. Hacker Boat Company a new runabout for Dustin Farnum, of motion picture fame. He is an ardent motor boatman and is shown at the controls of his 61-foot motor yacht Ding which he navigates himself.

His latest boat, Miss Los Angeles, is powered with a six-cylinder 5x7-inch Hall-Scott marine motor and was



A New Pacific Speed Record Established

built with the express object of winning the silver cup event of the Los Angeles Motor Boat Club.

Miss Los Angeles was transported overland from Detroit to San Pedro, Cal., via motor truck as the illustration shows.

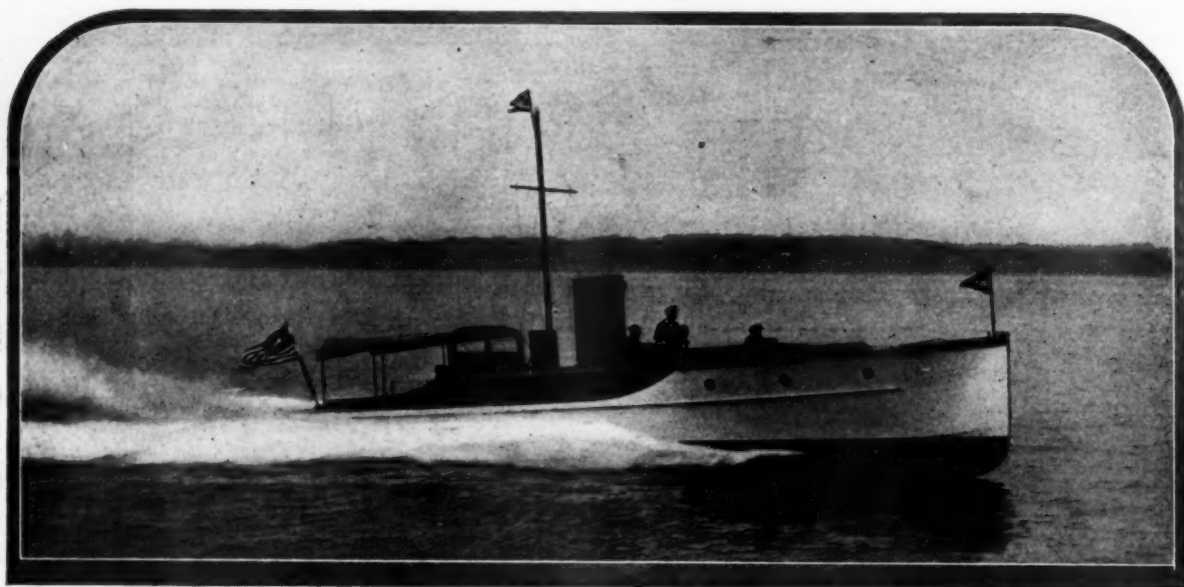
"Dusty" recently piloted his sleek Miss Los Angeles to victory in the Los Angeles Motor Boat Regatta. What's more the motion picture star broke all speed records while

(Continued on page 82)

Dustin Farnum at the wheel of his yacht Ding



How the overland journey from the Hacker shops at Detroit to San Pedro was accomplished



Cigarette flying a club burgee at the bow staff, the owner's private signal at the signal mast and the yacht ensign aft. This boat is a 55-footer designed by William H. Hand Jr. and built by Robert Jacobs

Flags—Why and Why Not

By L. E. White

A well authenticated story went the rounds last year about a harbor excursion that was chartered to take a famous corps of visiting French veterans on a river trip.

After the steamer had left her dock it was discovered that no French ensign was displayed but a bright member of the crew came to the rescue and hoisted an International code T, with almost fatal results to himself for the Frenchmen were fighters and proved it then and there.

Too many motor boatmen are immune from some such swift retribution which it would seem is the only way they could be sufficiently impressed with the error of their ways. "Flags is flags," is their motto and if they can have some bit of bunting on every hoist, they are all dressed up and they don't care who knows it.

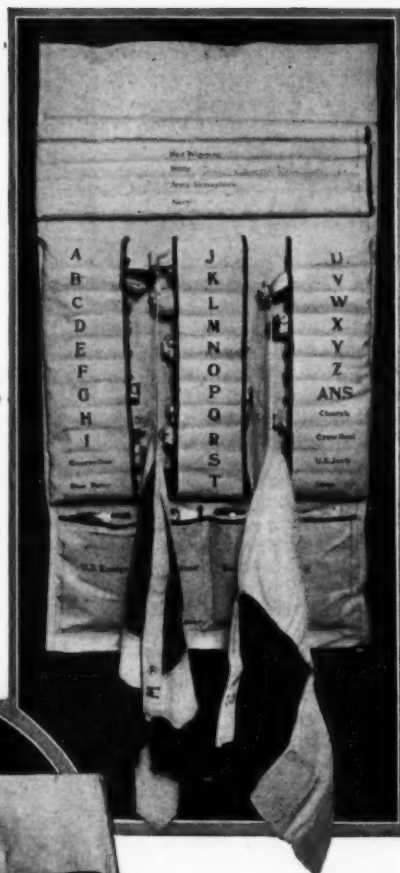
There are two important things to remember about the flag equipment of the average cruiser—a well made set of flags and a place to stow them properly.

I say cruiser advisedly for a cruising boat is like a sea-going ship "going foreign." She goes among strangers. She must tell who she is and where she comes from and sometimes other things as well. How she does it marks her and her owner among the initiated in an unmistakable and entirely definite way.

Flags are a means of expressing a message, not merely decorations. Two or three flags properly placed are far better than a smother of bunting without rime or reason, under ordinary cruising conditions.

There are times, few and far between, let it be hoped—when a boatman needs a method of communication which the International code can best supply. Unfortunately too many boats have a jumble of code flags somewhere about to be used on gala days for dressing the ship but they lack the prime essential—the code book published by the Hydrographic Department of the Navy.

The use of code flags should be understood by every boatman for while the semaphore is faster it means long hours of study to master, while anyone equipped with a code book can get the code flag message accurately. All coast guard stations and Government



Flag bag made by the Betsy Ross Flag Co. of Newburgh especially for use on motor boats and motor yachts. One view shows the bag open while the other shows its form while being carried



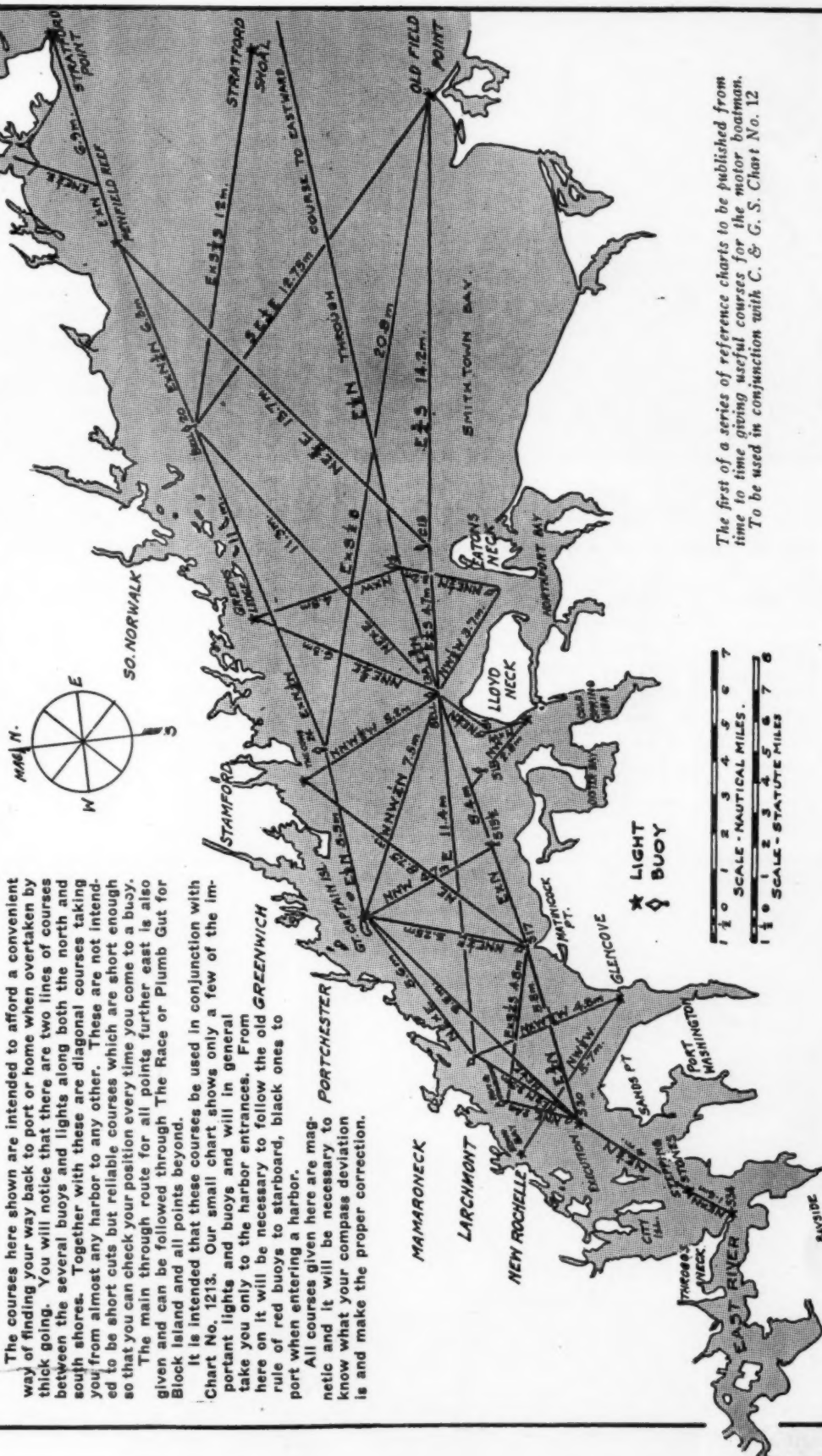
(Continued on page 82.)

Useful Compass Courses on Western End of Long Island Sound

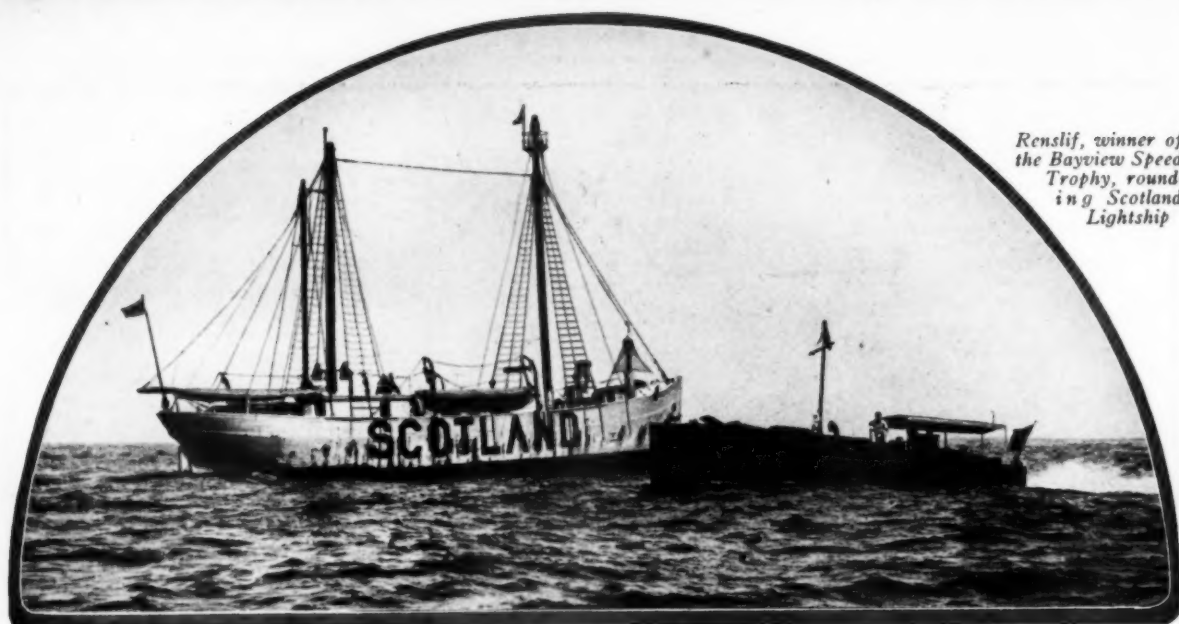
The courses here shown are intended to afford a convenient way of finding your way back to port or home when overtaken by thick going. You will notice that there are two lines of courses between the several buoys and lights along both the north and south shores. Together with these are diagonal courses taking you from almost any harbor to any other. These are not intended to be short cuts but reliable courses which are short enough so that you can check your position every time you come to a buoy. The main through route for all points further east is also given and can be followed through The Race or Plumb Gut for Block Island and all points beyond.

It is intended that these courses be used in conjunction with Chart No. 1213. Our small chart shows only a few of the important lights and buoys and will in general take you only to the harbor entrances. From here on it will be necessary to follow the old GREENWICH rule of red buoys to starboard, black ones to port when entering a harbor.

All courses given here are magnetic and it will be necessary to know what your compass deviation is and make the proper correction.



The first of a series of reference charts to be published from time to time giving useful courses for the motor boatman. To be used in conjunction with C. & G. S. Chart No. 12.



*Renslif, winner of
the Bayview Speed
Trophy, round-
ing Scotland
Lightship*

The Final Ocean Race of the Season

Class A—Cruisers 38 Feet on Waterline and Over—Start 10 A. M.—Distance 45 Nautical Miles (51.82 Statute Miles)
September 21, 1919

BOAT	OWNER	CLUB	MOTOR	H. P.	L. W. L.	B. W. L.	M. S. SEC.	RATING	Elapsed Time	Cor- rected Time	Pos- ition
Adelew	F. L. Salomon	Rockaway Park Y. C.	Ralaco	12.57	39.0833	8.9167	10.41	min-34.38 34.79	5-31-51	4-13-30	1
Viva	A. Pettit	Tamaqua Y. C.	Bridgeport	24.38	41.0000	9.75	15.44	min-35.20 35.24	5-26-42	4-15-53	2
Python	R. Geiser	Tamaqua Y. C.	Standard	18.38	42.167	8.833	11.14	min-35.69 35.75	5-23-46	4-17-28	3
Gardenia	H. Anderson	N. Y. Athletic C.	Standard	28.66	43.70	9.125	12.32	min-36.40 36.88	5-02-08	4-18-09	4
Champ	Wm. Bond	Tamaqua Y. C.	Sterling	27.32	39.583	8.75	10.94	min-38.51 38.57	5-11-40	4-28-35	5
Madeline III	O. Reilly	Hudson River Y. C.	Niagara	31.91	38.417	8.75	12.57	min-38.56 38.57	5-17-17	4-34-46	6
Renslif	J. A. Flaner	Tamaqua Y. C.	Niagara	30.22	38.9167	7.8333	11.42	min-41.68 41.68	4-56-24	4-35-27	7
Elizabeth C. II	Jas. Crane	Tamaqua Y. C.	Lamb	32.17	40.416	10.583	19.84	min-38.50 38.57	5-22-11	4-38-57	8
Albatross	W. H. Wood	Rockaway Park Y. C.	Sterling	26.85	38.7083	8.7917	12.83	min-36.88 37.37	Did Not Finish	Did Not Finish	
Miamada	J. Friedenber	Rockaway Park Y. C.	Standard	13.82	41.08	8.75	11.64	min-35.20 35.20	Did Not Finish	Did Not Finish	
Marlene II	H. M. Williams	N. Y. Athletic C.	Buffalo	60.01	45.064	11.271	17.84	min-42.09 42.09	Did Not Start	Did Not Start	
Sybil	J. M. Vanderbilt	Hudson River Y. C.	Sterling	48.92	39.52	8.333	10.24	min-45.19 45.19	Did Not Start	Did Not Start	



*Rose Mary,
scratch boat in
Class B.*



*Victory II, the
Sterling pow-
ered winner of
Class B*

THE Tamaqua Yacht Club of Sheepshead Bay, Brooklyn, N. Y., showed the greatest outburst of racing enthusiasm of any club in the east this past summer. Event followed event so closely that it has been well-nigh impossible for a monthly publication to chronicle the results. Several club races besides a number of open events were scheduled and held with remarkable success.

The latest and perhaps the most successful race was the ocean race held at the close of the racing season. Twenty-six cruisers entered and all but three of them started, probably a record for the number of entries in any one race this summer.

The Race Committee, consisting of M. H. Tisne, chairman, G. L. Baylies, A. Lee and F. B. Williams, had the arrangements so well planned that there was not a hitch. The course, 51.82 statute miles in length, was from the Club's starting line off Manhattan Beach to the buoy off Jones Inlet, around Ambrose and Scotland Lightships and back to the starting point.

The cruisers were divided into two classes, the dividing point being a waterline length of 38 feet. Eleven boats started in the large class and twelve in Class B.

Rivalry between the crews was most keen as the winners of the season's events in the vari-

ous localities around New York were competing. Victory II and Gardenia, winners of their classes in the Long Island Sound Races were out for blood. Madeline III, Kodak, Falcon and Amorita came down from the Hudson to try their skill against the ocean sailors of the Tamaqua Club. Ruthie II, Lesbia, Ace, Niobe, Adelew, Albatross and Miamada came from various points of Jamaica Bay.

When the smoke had died away at the finish, it was found that Adelew had won in Class A, Gardenia the favorite, getting no better than fourth place. However, only 4½ minutes, corrected time, separated the first and fourth boats and Gardenia's defeat could be traced to poor helmsmanship. Victory II, as was expected, won in Class B.

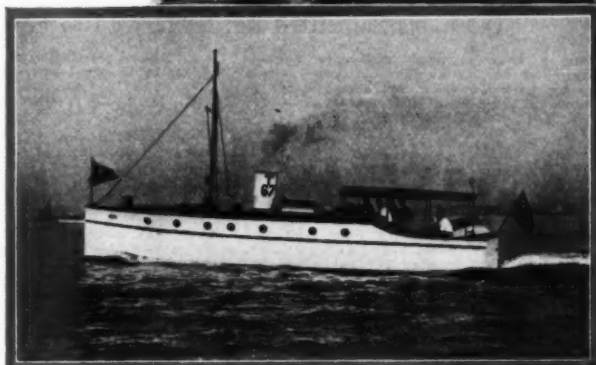
Full details of the boats and results are printed herewith:

Class B—Cruisers Under 38 Feet on Waterline—Start 10 A. M.—Distance 45 Nautical Miles (51.82 Statute Miles) September 21, 1919

BOAT	OWNER	CLUB	MOTOR	H. P.	L. W. L.	B.W.L.	M. S. SEC.	RATING	Elapsed Time	Corrected Time	Position
Victory II	H. A. Jackson	N. Y. Athletic C.	Sterling	15.84	35.77	7.958	9.12	35.00	5-16-04	4-50-29	1
Ruthie II	F. Doebell	Bergen Beach Y. C.	Lamb	9.74	30.666	7.9167	9.24	30.70	6-16-33	5-14-56	2
Natalie II	A. Nelson, Jr.	Tamaqua Y. C.	Buffalo	16.24	32.333	7.9167	9.24	34.60	5-40-02	5-20-35	3
Kodak	R. J. Haslinger	Hudson River Y. C.	Sterling	21.44	32.333	8.958	11.198	35.38	5-35-10	5-22-11	4
Fannie U III	S. O. A. Ullman	Rockaway Park Y. C.	Ralaco	13.07	34.333	9.00	12.75	min-32.33	6-07-37	5-23-08	5
Falcon	J. W. Johns	Hudson River Y. C.	Palmer	19.63	34.75	8.42	9.116	36.66	5-36-52	5-35-11	6
Minnie B.	E. V. Barton	Tamaqua Y. C.	Palmer	16.20	29.25	7.917	9.90	33.75	6-06-08	5-38-07	7
Lesbia	W. C. Hamblin	Bergen Beach Y. C.	Palmer	19.63	36.50	8.4583	12.60	33.76	6-06-54	5-38-53	8
Rosemary	Chas. Sherz	Tamaqua Y. C.	Peerless	30.41	29.66	7.25	8.46	36.86	5-43-52	5-43-52	9
Blue Bird	H. E. Childs	Tamaqua Y. C.	Doman	18.45	32.25	8.583	10.38	34.77	6-03-59	5-45-32	10
Ace	A. C. Merkle	Bergen Beach Y. C.	Sterling	14.33	30.333	7.1667	8.67	33.97	6-16-25	5-50-23	11
Niobe	S. Susswein	Rockaway Park Y. C.	Speedway	18.55	33.666	8.583	11.80	33.98	6-55-00	6-28-58	12
Amorita II	Dr. C. Palmer	Hudson River Y. C.	Doman	19.63	30.83	9.46	11.624	34.20	Did Not Finish		
Wileway	L. Ettlinger	Rockaway Park Y. C.	Ralaco	13.07	36.083	8.25	9.28	33.42	Did Not Start		



Blue Bird, owned by Commodore H. E. Childs, always a contender but not discouraged because he seldom wins



Champ, owned by William Bond, which ran well in Class A

Adelew, winner of Class A for cruisers of over 38 feet in length. Her power is a Ralaco.



Start of the Ocean Race of the Tamaqua Yacht Club in which Adelew proved the winner in Class A and Victory II in Class B



SMALL MOTOR BOATS

Their Care, Construction and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for January Prize Contest

1. Describe how to handle a boat equipped with two engines and propellers such as docking and leaving a wharf by going ahead with one engine and backing up with the other and using rudder at some time in different positions. Use sketches if necessary.
Suggested by W. H. F., Port Elgin, N. B.

2. Describe and illustrate with sketches what experience has shown you to be the most efficient type of cook stove for the small motor boat.
Suggested by H. A. H., Baltimore, Md.

3. Give systematic directions, using sketches if necessary, for taking down and reassembling the average engine. State fully the precautions to be taken to insure a satisfactory job.
Suggested by J. F. C., Providence, R. I.

ANSWERS to the above questions for the January issue addressed to the Editor of MoToR Boating, 119 West 40th St., New York, must be (a) in our hands on or before December 15; (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.
QUESTIONS for the next contest must reach us on or before December 15. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary. The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of MoToR Boating of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more

than that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR Boating, of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Spare-Time Occupations During the Lay-Up Period

Answers to the Following Prize Question Published in the September Issue

With your boat out of commission for the winter, what form of motor boating will your interests turn to to occupy your spare time until spring?

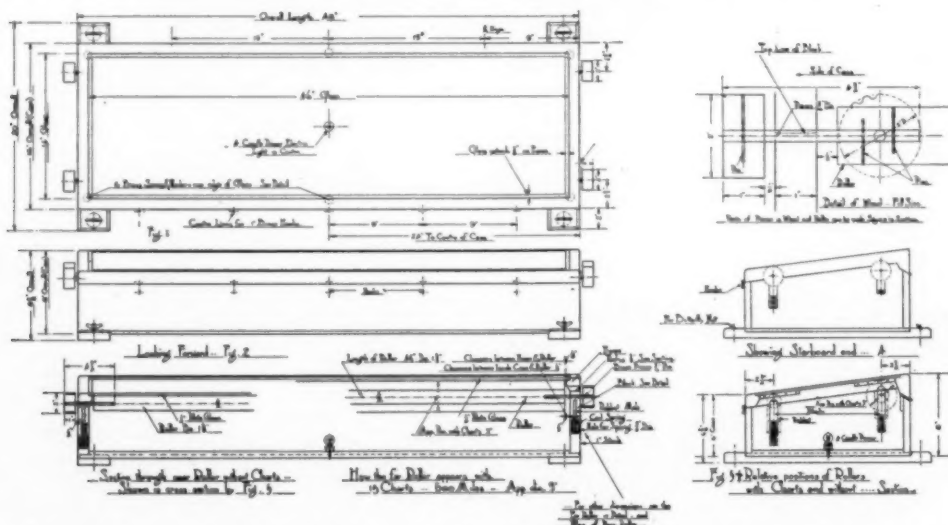
A Chart Holder for Cruisers

(The Prize-Winning Answer)

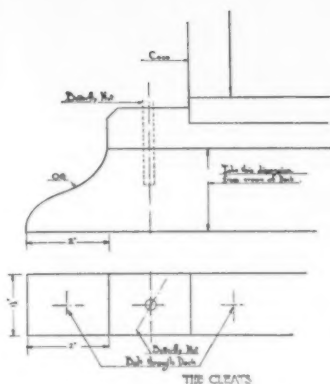
FOR the true corinthian motor boatman there is really no part of the year during which his thoughts do not occasionally turn boatward. With the end of the sailing season numerous improvements and additions, in the otherwise perfect boat, are clearly visible. These changes might entail engine accessories or a new locker below deck in a heretofore wasted space. Granted that the previous year might have made these conveniences realities and the time for the boat's general overhauling is still three or four months in the future, the planning for the cruise for next summer would be an interesting and profitable indoor pastime.

With the boat's full quota of charts at home an occasional study of each individual chart will result in a goodly

amount of instruction and education, which, in the haste of laying courses during the last cruise was overlooked. Several evenings could be profitably spent by plotting or laying full courses, on all charts. For example, the course from the home port, say to New York, out through Long Island Sound, Cape Cod Canal, along the coast to and back through the St. Lawrence connecting with the Hudson River, then down to the starting point. By marking the main course in black ink, (with the aid of a draftsman's ruling pen) setting the correct compass course, in small letters or degrees to each change, and with a dividers accurately set to the scale of five miles, measure off the spaces making a short dash across the main course line and place a figure representing the total number of miles from the starting point. The use of the statute mile (5,280 feet) is less confusing than that of the nautical



Plans and details of chart holder suggested by L. K., showing rollers with and without charts. Scale—3 inches = 1 foot



Sections through rollers and corner joints

mile (6,080 feet) for inland or coastwise work. The complete course will run over several charts but the distance can be marked in total from the home port on the first chart.

The necessity of a practical device to hold charts, especially on the cruiser of 25 to 40 feet, is clearly evident while a cruise in strange waters is being sailed and even more so during unfavorable weather, the time when charts are most needed. The usual practice of keeping charts rolled in a metal container does not permit of convenient handling and dodging below to read the next few courses and committing them to memory does not add to safe navigation.

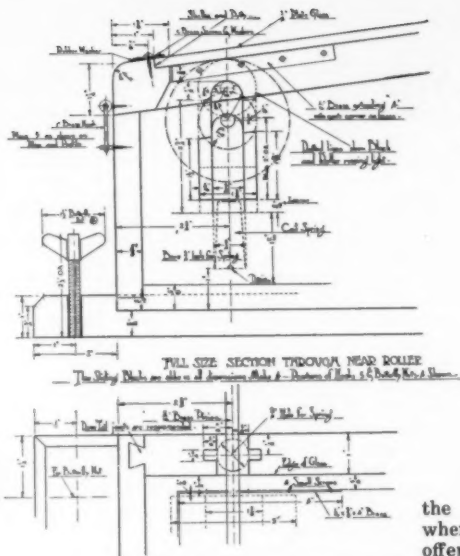
Mainly the device consists of an oblong case, 48 inches long by 16 inches wide, with a hinged plate glass cover of full dimensions, set at an angle making the case 8 inches high at the far side and 6 inches high at the near or opening side. Two rollers, on which the charts are rolled, are held flush under the glass top by the pressure of a spring under each end of both rollers set under a sliding rabbeted block. A small wheel or knob set in each end of the rollers and extending outboard of the case, permits control and enables the rolling of the charts on or off either roller.

The case as designed is long enough to take the largest standard Government chart (an allowance of 45 inches is made) and the readable section in the other direction equals about 12 inches. A few turns backward will bring to view the waters already traversed while it is just as simple to obtain advance knowledge of future courses by the opposite movement.

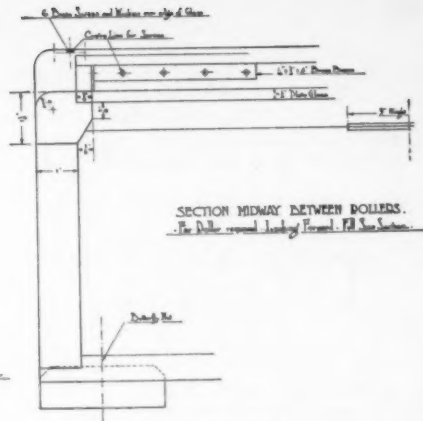
For holding the charts to each other in proper sequence attach by small strips of adhesive tape. The total mileage is dependent entirely upon the scale of chart used. An approximate diameter of 3 inches is allowed, equivalent to about fifteen charts or upward of 500 miles of courses.

With the installation of a 4 c.p. electric lamp on cabin circuit with separate switch inside in the bottom of the case, which will illuminate the entire section of chart; night sailing is made far more interesting. If properly made the case is absolutely waterproof and the charts cannot be damaged by stress of weather. Water will not collect on top due to the angle of the cover and this pitch is just sufficient to make comfortable the use of parallel rules to ascertain bearings, etc.

Probably one of the most attractive features of the device is the fact that because of its position directly before



Full size section through near roller
Further details of L. K.'s chart holder
Scale—3 inches = 1 foot



Section midway between rollers
looking forward

the helmsman, on top of the cabin roof where it is held in place by butterfly nuts; offers a sense of security and positiveness which is not available otherwise.

A few weeks of winter evenings plus the ability to handle ordinary carpenter's tools, a place to work, with possibly a bench and a vise; is all that is necessary to build the case.

The specifications are clearly written on the plans and any boat-builder or cabinet maker can and will at a nominal cost, surface sides, cut to size, rabbet and otherwise complete the sides, ends and bottom. A variety machine, with which all boat shops are equipped, will make short work of cutting the rabbets in the frame, that part which is the most intricate of the entire construction. Ordinary curtain poles have been successfully used for the rollers. The springs probably can be bought but with a lathe at hand they can be easily made of drawn brass wire of about $\frac{1}{8}$ -inch diameter.

If the case is to be painted the use of white pine with a frame or cover of mahogany would be a good combination. Other woods suitable, especially so if the case is to be varnished entirely, would be any species of mahogany, African, Honduras, Mexican, Philippine or that which is commercially known as "Baywood". Teak is highly preferable but its extreme weight and hard working qualities might count against its selection. Lightness could be gained however, by cutting grooves in bottom and sides on the inside of case.

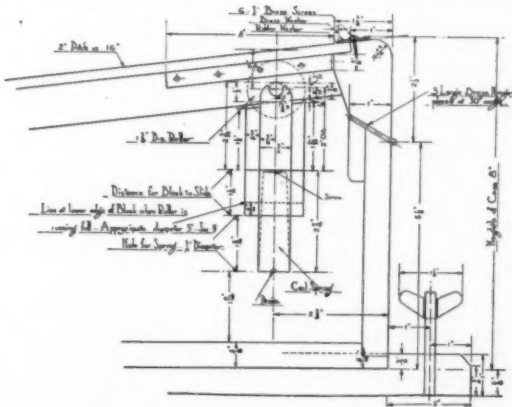
Hardware necessary would consist of four strips of brass $\frac{1}{2}$ x 8 x 1/16 inches thick, for the corners of the frame, five 1-inch brass hooks and eyes, four $2\frac{1}{2}$ -inch wing or butterfly nuts, four brass pinions for rollers $5/16$ inch diameter by $4\frac{1}{4}$ inches long, three large hinges and the required number of screws.

The finishing can be completed in the usual way and

needs no mention here. For appearance screw heads should be countersunk and wood plugged. Stain or not as your fancy dictates. Possibly the most attractive finish could be obtained by the use of clear wood filler, of course after all parts are sandpapered smooth and then the application of at least four coats of spar varnish.

One of the most prominent builders of yachts in the East has made and furnished to several large motor yachts the chart case herewith described and illustrated.

L. K., New York, N. Y.



Details of far roller showing how it is held close to glass. Scale 3 inches = 1 foot

What to Do When Your Motor Stops Suddenly

Answers to the Following Prize Question Published in the September Issue

Suppose you were sailing along with the engine working perfectly when suddenly the motor stopped, name in order and describe systematically just what are the first things to do before getting the motor out of adjustment.

Look Before You Leap

(The Prize-Winning Answer)

THERE is perhaps no time when the adage "look before you leap" prevents trouble and annoyance more than when a marine motor stops suddenly and without warning. Any hasty taking apart of the motor or its accessories is almost certain to disarrange and throw out of adjustment parts which have been functioning perfectly and is not so likely to bring about an expeditious location and correction of the trouble as is a methodical and intelligent investigation. Gasoline motors do not stop unless there is some cause for their stopping, notwithstanding all the picturesquely profane statements to the contrary made by everyone who has wrestled with a balky one. There is no better way of studying out the idiosyncrasies of a particular motor and save time in determining the cause of a sudden stop than by making a complete trouble chart during a leisure hour on a cruise when the engine is working perfectly. This trouble chart should be modeled after the familiar charts which can be found in many marine motor handbooks, but should not be a slavish copy of any of these charts. It should apply definitely to the motor in question and should take cognizance of any peculiarities of installation which might cause engine trouble. The following hints may be of some help in the preparation of such a chart:

Suppose the motor to be working perfectly and then suddenly to stop:

1. Examine switches that may have opened by the vibration of the engine.

2. "Tickle" the carburetor and see if the gasoline feed is working all right. If the carburetor is not getting gasoline examine any stop cocks, or valves in the fuel system which may have become closed; see if there is gasoline in the tank, and finally investigate to see if the fuel line or the strainers in it are clogged. A stoppage of the gasoline line or the gasoline duct in the carburetor may possible cause a sudden stop but is more apt to cause a stop preceded by misfiring or backfiring through the carburetor.

3. Prime the engine with gasoline of known quality carried in the priming can and attempt to start it. If the engine runs a few revolutions on the priming and then stops the trouble is that no fuel, or an insufficient quantity of it, is reaching the cylinders. If the supply to the carburetor has been tested out as suggested in paragraph 2 the trouble may be definitely located in the needle valve or the ducts leading to it. If the engine does not fire at all after priming there is something wrong with the ignition system.

4. If the trouble has been definitely traced to the ignition system certain probable and possible sources of trouble should be examined as follows:

- a. Throw in the switch and crank the engine slowly if it is equipped with a vibrating spark coil and jump spark. If the coil buzzes the trouble is in the secondary or high tension system while if it fails to buzz the trouble is in the low tension system. Test out the high tension system for cracked plugs, grounds, broken wires, or a deranged high tension distributor. Test out the low tension system for failure of the source of current, broken wires, grounds, stuck vibrator points, or a deranged timer.

- b. If jump spark is used with a non-vibrating coil a plug should be removed and laid on the top of the cylinder while the engine is cranked and the strength of the spark noted. Test both primary and secondary systems for broken wires and grounds. Test the timer of the primary system and the distributor of the secondary.

- c. In make-and-break systems the more usual causes of failure are broken wires, grounded wires, and igniters stuck with their points in contact which of course short circuits the entire system. These difficulties are easily tested for and can usually be quickly remedied.

5. Mechanical troubles. In nearly all cases of sudden engine failure the trouble will be found in the fuel or ignition system and may be found by the methods outlined above, in rare cases, however, mechanical trouble occurs and must be found and if possible rectified. Such troubles divide themselves broadly into two classes: breakage of a major part and slight mechanical derangements of minor parts. The breakage of a major part, such as the crankshaft or a connecting rod is generally accompanied by a considerable noise and is easy to locate but hard to repair. Minor mechanical troubles may be very illusive. They are more apt to occur on make-and-break than on jump spark engines but may take place on either. The most frequent troubles of this kind are slipping set screws, or sheared keys, taper pins, or cotter pins in magneto, timer, distributor, or camshaft drive. Such troubles can be found by noting the failure of certain parts to move when the engine is cranked or by the faulty timing of the spark or the valves in case the drive in question has not failed entirely but is slipping.

W. M. A., Philadelphia, Pa.

Sudden Stopping of the Motor

THE sudden stopping of the motor when you are out with a party of friends, or when the white caps are rolling high, is not a pleasing proposition, as the motor must soon be started to preserve the good nature or safety of the whole party. As the owner, captain, and chief engineer it is up to you to know your machinery and equipment. If you did not make the installation yourself, study out the wiring, piping, etc., while everything is all right.

Should the motor stop suddenly without previous missing or other indication of trouble look to the ignition immediately. Remove a high tension wire from a spark plug and place it about 1/16 inch from the terminal. Turn the motor over with the switch on and you will soon see the spark if it is there. Not finding a spark look for a loose connection or a broken wire. If either the lead from the source of current or the center wire which carries the current for all cylinders came loose it would immediately stop the motor. A broken or loosened wire should occasion no great amount of delay as a wire is easily replaced or spliced or the connection tightened.

It is unlikely that the vibrators for all the cylinders of a multi-cylinder motor would stick at once although a stuck master vibrator would prevent all cylinders from firing. In a non-vibrating system the failure of the breaker points would occasion a sudden stop. Vibrator and breaker points loosened from their carriers and fall off. A little solder judiciously applied or a few light taps with a hammer would bring you home but—don't trust to luck—get new ones.

In the high tension magneto systems the failure of the magneto or distributor might cause the trouble but unless you carried repair parts you could not make immediate repairs other than cleaning or adjusting.

The make-and-break system might get out of order from the loosening of a set screw, or the failure or burning away of the contacts inside the cylinder. This system is easily tested by scraping the plug wire over the insulated electrode and the side of the motor. On getting a good spark on the motor hold the flipper where it is supposed to make contact and try the wire on the insulated electrode. If no spark occurs the trouble is very apt to be inside the motor.

In four-cycle motors sudden stopping would result from a broken camshaft or camshaft driving mechanism. The

slipping or failure of the term driving mechanism or the breaking of a small part inside the timer might be the cause of the interruption of operation.

Carburetion is not so apt to be at fault but it is not infallible.

If there is no gasoline in the carburetor bowl it is a sure sign of an interrupted supply or an empty tank. You can blow out a stoppage in the pipe line with air pressure and you should have two or three gallons reserve supply safely stowed away for just such an occasion.

The accidental closing of the needle valve or a shut off in the supply line would stop the motor immediately but any trouble occasioned by faulty carburetion would usually be accompanied by missing and backfire before the motor came to a complete stop.

When looking for the cause of a sudden stop or any other trouble take one thing at a time and when sure that the trouble is not there leave that part connected and properly adjusted. Don't get everything possible out of adjustment at once. You will never find the trouble that way. Remember that trouble which would only cause a multi-cylinder motor to miss might completely prevent the operation of a single-cylinder machine.

W. B. M., Newburgh, N. Y.

Spare Time Occupations

(Continued from page 23)

Navigation--Both Interesting and Instructive

THE man whose interest in his boat goes out of commission at the same time his boat does loses more than half the joy of life—and motor boating. Though winter may make you take down your flag and haul your boat out you can get as much fun out of the game ashore as you do afloat. And indeed there is as much to occupy your time and interest in the winter as the summer. Every holiday, Sunday or any other day that can be stolen from the office or shop is most profitably used in doing all manner of such necessary work as cleaning bilges, ice-box, stove, overhauling engine, grinding valves, repairing toilet, wiring, etc., not to mention scraping of flag poles, spars, dinghy, and other work which can be done under the shed. Then when one of those clear dry warm days occur with light northwest winds a first coat of varnish can be given the scraped work (apply it before ten o'clock if possible) which protects the new surface while stored for the winter in the locker and puts you so far ahead of the other chap in the always mad scramble to get overboard in the spring. Almost every kind of work (except the final coats of paint and varnish) can be accomplished in the winter, if you plan according to the weather, with the result that early May sees you overboard and incidentally provides beneficial physical exercise in the open air to be gotten in no other way.

Then as many evenings as you can spare should be devoted to study of navigation; get your shipmates together one night a week and start in with thoroughly mastering the rules of the road. Cut out some paper boats and put yourself in every imaginable position and know instantly what signal to give. Learn by heart (it won't take five minutes) the equipment required on board so there won't be any fines the next time the inspector stops you. All this can be found in the Pilot Rules to be had for the asking at the customhouse or nautical, publication houses. After that take up the study of piloting or navigation along shore which will teach you all about the lights, buoys, charts, laying courses, navigation in fog and the thousand and one things so easily learned and which everyone should know if not from pride then for the safety of your family and self.

The number of clubs holding instruction classes in the winter is increasing every year and these as well as the classes of the United States Power Squadrons are open to every yachtsman without any charge whatever. After you have mastered knowledge enough to take you along shore, comes dead reckoning and then nautical astronomy after which you have learned all the books can teach you for

navigating the seven seas. The study is not one-tenth as hard as it seems to the novice and requires nothing more than an ability to "read, rite and rithmatic".

For those of any drawing ability designing represents a most interesting study but navigation in all its branches should be mastered first.

If in doubt about text books, of which there are numberless excellent ones, or desirous of joining one of the numerous classes soon to be formed write to MoToR BoatinG, and you will find entertainment and knowledge voyage close aboard.

H. A. J., New York, N. Y.

Designing Your Own Boat

WITH the boat hauled out and everything made snug for the winter, the question of how the motor boat enthusiast shall spend his spare time until fitting-out time, and still be near his hobby is an important one. Naturally the dyed-in-the-wool bug is not going to forget all about boats during the winter months. More often it is a case of "absence makes the heart grow fonder."

For the price of the tickets to one evening's theatre party one may purchase an outfit that will not only furnish him with many hours of entertainment but may be of some material value as well.

I speak of a case of drawing instruments. Certainly no one who has studied the Ideal Contests that have been appearing in MoToR BoatinG can question the fact that the amateur is capable of producing some mighty worthy designs. If you are thinking of building a boat by all means design her yourself. The chances are that what you have in mind is not exactly like anything you ever saw and yet you have a definite idea of what she ought to look like. Build her on paper yourself. Remember that the lines you draw on paper are just as much your boat as when she is set up in the shop. There is nothing mysterious about a design. A foot is a foot although it may be only a quarter of an inch on your drawing according to the scale you use.

Should you decide to build from your plans and feel any doubt as to any details have a naval architect go over them for you. However, there is so much valuable material to say nothing of precedent at hand, that a man with any kind of boat sense need not go astray.

Perhaps you are considering making some alterations to your boat next spring. A new stern, or maybe a revision of the interior. Take her measurements home with you and winter evenings you can juggle ice-boxes and tanks until you have what you want. Then with a good set of drawings the work is half done.

Maybe your outfit suits you and you are going to stand pat next year. Then try your hand at the boat Neighbor Jones has been talking about, or design a skiff for Neighbor Smith who has been searching up and down for the model he cannot find.

If you haven't any neighbors experiment on something new. It will not cost much on paper. The V-bottom and the sea sled were new ideas not very long ago. Let's see you design a motor catamaran with two light single step hulls and a high-speed motor hung over the solid water between them. There is a life-time job for the man who enjoys this sort of thing, and remember—the ultimate motor boat hasn't yet been designed.

As to the kit you will need, the one your dealer will sell you for a student's outfit is quite good enough. It should consist of a drawing board, case of instruments, T-square, protractor, scale rule, triangle, 2 irregular curves, a hard rubber spline, half a dozen spline weights (these may be cast at home out of lead with copper wire fingers), some detail paper, tracing cloth, ink, and thumb tacks.

W. H. F., So. Freeport, Me.

If you are interested in obtaining a new boat for next season read the announcement on page 57. There you will see that William H. Hand Jr., America's foremost designer of V-bottom boats, is to design 12 complete boats for us next year and that one set of plans and building instructions is to be published in each issue of MoToR BoatinG in 1920.

Blames the Carbureter

THERE are several ways for a gasoline engine to stop, and if you listen carefully when the engine is stopping it will help you at times to locate the trouble.

When your engine slows down gradually with the carbureter coughing back, you can almost be sure that the trouble lies either in the carbureter, or the gasoline line.

Should the engine stop, as stated before, but no back firing on the carbureter, you want to look to the electrical equipment.

Should the engine stop with a severe knocking, the trouble more than likely lies in a sticking valve, a slipped cam, or a slipped gear. It also may be a burned out bearing.

The engine, if it has been running smoothly, getting lubricating oil, and not getting hot, is usually not out of order when it suddenly stops, but some minor thing has given away, and no one should change spark or carbureter until they are sure that the trouble lies in that spot.

The following is the way that the writer has found engine trouble: First see that the gasoline is in the carbureter, by opening the pet cock on the bottom. Also look at the

same time if water has settled in the carbureter. Next see if the float is working the cut off valve in the carbureter properly, by pressing down on the flooding stem, and see, when you release same, if the valve cuts off. Then go to the flywheel and pull up a cylinder to the firing point, take out the plug and see if it is firing. Also go over all of the wires to see if any are broken. Remember that the vibrator points on the coil also, as they sometimes stick. It is well to reverse the wires on the batteries once in a while to change the current on the contact points of your coil.

Next in order is to see that your valves have not stuck. This can be readily ascertained by working them by hand, or have someone turn over the flywheel while you watch them. It is also well to watch the firing points on your cylinders, and see if the valves are working at the proper time. If they are not, then look to your cams, and see if they have slipped, or see if the gears are out of mesh or have teeth broken.

Of course, all cases are not alike, but as a general rule if the above steps are taken, you will find your trouble in a short time, without getting your engine out of adjustment.

C. G., Baltimore, Md.

Valve-Tappet Adjustments

Answers to the Following Prize Question Published in the September Issue

Explain and illustrate a practical method of adjusting valve tappets so that they are quiet and operate properly.

Adjust While Motor is Hot

WHEN the engine is in operation and thoroughly heated there should be an appreciable (.002 inch) clearance between the end of the valve stem and the valve tappet with the valve closed. A very simple thing, you may think, until you have tried to adjust the valves especially on an old engine.

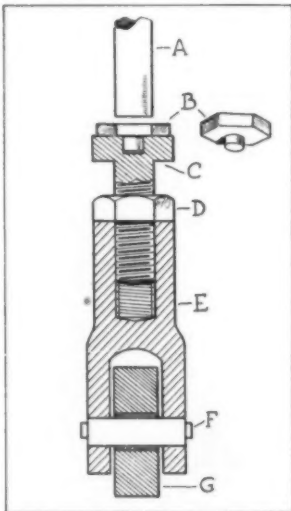
Three wrenches are required for the operation, one to hold the tappet, one for the lock nut and the other to turn the adjusting screw. Open end steel wrenches that fit the nuts and the ends on the taps are essential.

It is to be noted that the valve and the valve tappet are both free to turn and the tappet especially turns freely at every operation. Wear takes place in the tappet guides and at the point of contact of the stem and tappet bolt. In an old engine you will find an appreciable hollow in the tappet bolt head worn there by the end of the valve stem. Now the wear in the guides allows side motion so that the clearance in one position may be considerably different from some other position. The hollow in the tappet bolt also wears uneven, depending upon the rotation, and this hollow also prevents use of feeler gauge.

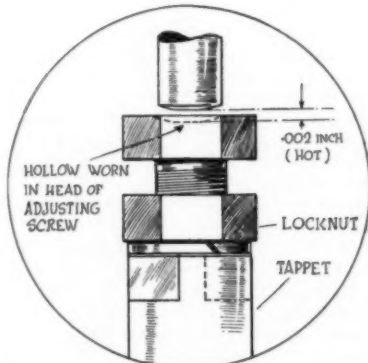
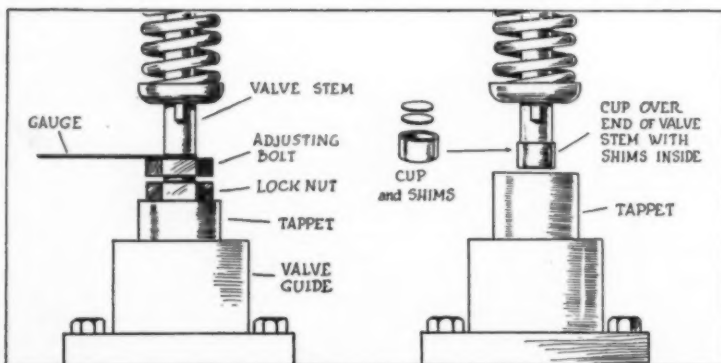
I find it most practicable to make adjustment without the use of feeler gauge in the following way. Back bolt out of tappet until it is evident by trying to move tappet with fingers that there is no clearance at all. Then loosen tappet bolt until the tappet can be moved up and down the least amount, then turn tappet in different position and try movement. In some positions you will note there is greater clearance or movement. Adjust tappet so it can be moved upward and downward sufficiently to make an audible click as the contact is made against valve stem and against cam. When the adjustment is correct tighten the lock nut and try it again. The lock nut should be tightened with a wrench at least 6 inches long. I always try to rest wrench used on the tappet against some part of the engine so that both hands may be free to hold the other two wrenches. A great many times the adjustment is thrown out when tightening the lock nut.

If the engine misses after you have adjusted the tappets you will find some tappet clearance too little. On the other hand, if some valve commences to get noisy you will find too much clearance or a loose lock nut.

L. R. L., Columbus, O.



Suggested by H. C. S.



Adjusting Valve Tappets for Quiet Operation

Valve tappets not properly adjusted will cause a considerable amount of noise in a motor, but sometimes they are blamed for noises they are not fully guilty of making. Worn timing gears not of spiral cut will often produce a click that sounds at times like a valve tappet noise but no amount of adjustment of the tappets will eliminate it. There is too much play between the gear teeth.

Valve tappets become noisy from two causes as a general thing, one being too much clearance between the tappet and the valve stem and the other, wear in the tappet bushing. The majority of up-to-date high-grade motors have provision for adjusting the valve stem clearance so that the valves will open with as little noise as possible. This is accomplished by means of a screw and lock nut adjustment on the end of the tappet.

Both intake and exhaust valve stems must have a certain amount of clearance between them and the tappets, otherwise when the motor heats up during operation, the expansion of the metal may be sufficient to hold the valve open. Exhaust valves require more clearance than the intake, since they get hotter. The proper clearance for intake valves is about .003 inch and for the exhaust about .005 inch. These clearances will insure as quiet operation as possible and will also allow for extra expansion. It is best if possible to get two small pieces of steel of these dimensions but lacking this, a piece of good writing paper will measure about .003 inch and a visiting card about .005.

The clearance gauge is placed between the end of the valve stem and the tappet and the adjusting screw is turned until the gauge will just slide back and forth, after which the lock nut is set up tight. After locking, the clearance should be tested again to make sure it is correct. It is best to make this adjustment while the motor is hot because the clearance can be set more accurately and there is no danger of setting it so close that expansion of the stem will hold a valve off its seat.

If adjusting means are not provided, the valve stems may be drawn out by peening to the proper length but this method is not very satisfactory. It is better to obtain a set of valve stem adjusters which consist of small cups to fit over the ends of the valve stems and an assortment

of steel discs of various thicknesses to place in these cups to give the proper clearance.

The other cause of noise in the tappets is due to wear in the bushing caused by the side thrust of the cams each time the tappet is raised. This wear cannot be avoided any more than wear in any moving part but the motor ought to run a long time before wear develops sufficiently to cause much noise unless lubrication has been deficient. When this wear does occur replacement is the only remedy.

When a "valve click" develops in a motor, the valve stem clearance is the first thing to inspect, but if this does not stop the noise, locate the particular tappet that is at fault and see if a new guide bushing is needed. Other than this, the noise is probably due to wear in the timing gears.

A. L. M., New York.

Fibre Caps Are Good

It has been the writer's experience that push rods can be made quiet and serviceable by the following method: Referring to figure 1, "a" is valve stem, "c" is cap screw threaded into valve tappet "e", secured in position by lock-nut "b".

With a drill slightly smaller than diameter of cap screw, drill hole into head of same for distance of $\frac{1}{4}$ -inch (see figure 2) then secure some fibre rod slightly smaller in diameter than the head of cap screw. Machine this fibre in lathe as in cross section "b", figure 1, of size to be a driving fit into hole drilled into head of cap screw. It may be necessary to cut off the end of cap screw "c", to compensate for additional length caused by insertion of fibre distance piece, but this is a simple matter.

After these pieces have been inserted, it is best to make temporary loose adjustments of push rods, then run engine until normal running temperature is attained, this will expand the valve stems, especially as regards the exhaust valve and will also permit the fibre pieces to compress themselves somewhat. Then while engine is still hot, adjust the cap screw so that there is between .0015 and .004 clearance between fibre pieces and bottom of valve stems. Provided only a small amount of clearance is allowed, no wear will occur in this device, and perfect quiet will result.

H. C. S., New Rochelle, N. Y.

Changes Made in Racing Rules for 1920

Rule XXIV

New paragraphs as follows:

4. A boat shall be disqualified which receives outside assistance, accepts a tow or withdraws from the race course before crossing the finish line.

5. A boat shall be disqualified which takes on fuel, supplies, equipment or articles or materials of any description before crossing the finish line without receiving the consent of the Race Committee.

6. A boat shall not be deemed as finishing which drifts across the finish line.

Rule XVI

New paragraphs:

4. A boat shall not be allowed to start in any particular race or heat after one boat has finished. A boat once having made a fair start shall not be permitted to make another start in the same race without the permission of the Racing Committee.

Rule XVI

Paragraph I—Change the sixth word "shall" to "may."

Rule XXVI

A new paragraph as follows:

3. The course for hydroplanes and displacement racers shall be arranged and laid out so that the turning buoys will be left to port by the competing boats.

A new rule to be numbered XXVI:

Scoring in Heat Races—Unless otherwise specified, scor-

ing in matches consisting of two or more heats or races shall be as follows:

The winner of the match shall be determined by the point system, whereby each boat entering and finishing a race of a match received one point for entry and one additional point for each boat which she defeats, the winner being the boat scoring the highest aggregate number of points in all the races of the match. In computing points the maximum number of entrants shall be deemed racing each day and those that do not start shall be counted as defeated boats. A boat which starts in a race but does not finish before one hour after sunset, shall receive no points for that race, but shall be counted as a defeated boat in that race by the boats finishing. In case two or more boats have scored the same number of points for the series, thus establishing a tie, the match shall be awarded to that one of the tied boats which has covered the course in the best total elapsed time for three races.

Renumber Rules XXVII and XXVIII, to Rules XXVIII and XXIX.

Add a new Declaration of Trust similar to that of the Gold Cup (pages 80 to 88) with the following changes:

Substitute for "40-foot class and under" "320 cubic inch class" wherever the expression appears.

Omit Article IV and substitute the following:

The match shall be managed by the same committee having charge of the Gold Cup race, held at the same time and place, and shall follow the same general conditions governing competition for the Gold Cup.

Starting Correctly to Build

VI. Methods of Planking and Caulking the Hull

By William Atkin

SMALL boats are planked in a number of different ways. Let me see: there is first of all the smooth or carvel method of planking. The hull of a boat planked thus shows a perfectly smooth surface and the planks are laid as shown in Fig. 39.

It is evident to any observant person that the girths of the hull are greater at the midship sections than at either the forward or the after ones. Because of this difference in girth—and because planking is usually applied in a way which if there are ten streaks (planks) at the midship section there are ten planks at every other section—it naturally follows that each streak must be cut to a taper; widest at the middle of the craft, narrowest at the ends: in order that streak may fit streak and symmetrically inclose the frame. The staves of a barrel are an example. The analogy to a barrel includes only the tapering feature of the staves. For the streaks of planking on a boat are not all of equal dimensions as those of the staves on a barrel are.

The usual practice of the boat builder allows the plank next the keel, called the garboard streak, to have generous width: in a 20-foot boat 10 inches is not too great. The several streaks next adjoining are somewhat narrower, and as the planking approaches the turn of the bilge its streaks narrow gradually, then widen again as the straighter top sides of the hull are reached. Fig. 40 shows the proportionate way the streaks vary in a 20-foot boat.

It is not uncommon to cut out three or four of the top streaks, called the wales, to similar dimensions and shape. These should be applied first, followed by the garboards, then the bottom planks next, and those covering the bilge last.

The unusual boat carries planking in single lengths. This sort of planking is popularly supposed to enhance greatly the value of the boat. Frankly, I am of the opinion that butted planks (two or three lengths to a streak) are equal in strength and durability to strips of single length. But this depends upon how well the butts are fastened. Fig. 41 illustrates one good way of joining plank butts. Butt blocks ought always to be cut from hard wood—white oak is best.

Streaks which cover the round of the bilge must be hollowed inside else they will not solidly fit against the frames.

This article is the sixth of a series by Mr. Atkin which will take up the complete building of a boat, step by step, in the proper order in which the construction work should be done.

A brief resume of previous articles is given for ready reference.

I—June 1919—The Laying Down of Lines—and the Proper Way to Interpret the Data on the Plans.

II—July 1919—Shaping the Stem, Keel, and Deadwood.

III—August 1919—Constructing the Deadwood and Boring the Shaftlog.

IV—September 1919—Various Methods of Stern Construction, Setting Up the Keel, and Bending of Frames.

V—October 1919—Steaming Woods, Fitting the Floors, Frame Fastenings, and Cutting the Limbers.

By following this series any amateur will be able to build his own boat.—Editor.

See Fig. 42 for the correct and incorrect way of fitting streaks against the frames and also against one another. The V opening "B" between the streaks is called outgauge and must be tight at the frame and remain open about 1/16-inch at the outside face of the planking. If the joint between the streaks is like that at "C" caulking will not stay secure which means the boat will not remain water-tight for long.

Smooth or carvel planking may be fastened to the frames with copper rivets, or with either brass or galvanized iron screws. The heads, however, must be counter-bored for and plugged.

I have worked on old craft of many kinds and taking everything into consideration those boats which were fastened with galvanized screws and boat nails were most sound.

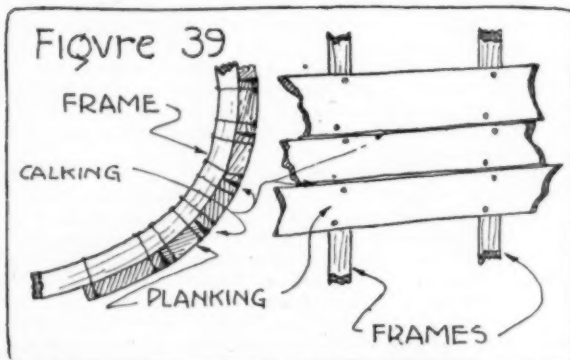
Nowadays we hear a great deal about the poor quality of galvanized fastenings. Hearsay is not always truth. Dipped galvanized fastenings of today are as good as those of twenty or more years ago. I grant though that those electroplated with a coating of zinc are not.

White cedar holds the palm for the best planking wood; yellow pine has a high place for the sheathing of yachts especially if weight is not material; mahogany for some types of boats has a place too. Nor must we forget cypress, the latter of plebeian stock perhaps, but still a mighty good wood for durability. It is, however, difficult to dress smooth, and resents paint.

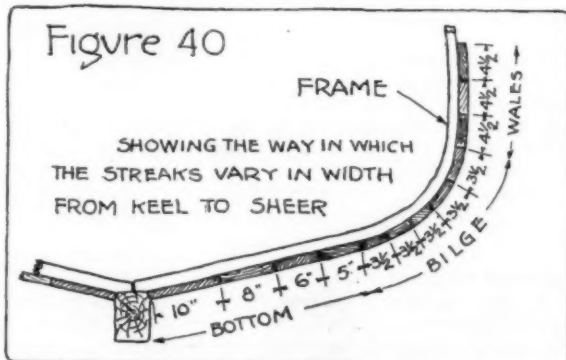
Carvel planking is made water-tight by caulking the joints, called seams, between the streaks with suitable caulking. In boats of small size cotton or cotton wicking is used.

As it is practically impossible to cut the bevel on every seam to an exact degree one of the several methods below is used in order to make them all approximately even.

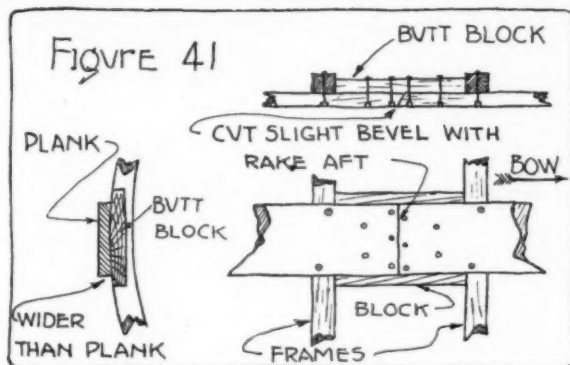
So to equalize the opening a wooden wedge of hard wood similar to "A" in Fig. 43 is driven along the seams. Or what is called a making iron, "B", is lightly driven into the seams. A caulking wheel, "C", also will accomplish the desired result, but not so well as the two former. As all three tools will, with intelligent application on the part of the amateur builder, correctly open the seams I shall leave the choice of them to the builder.



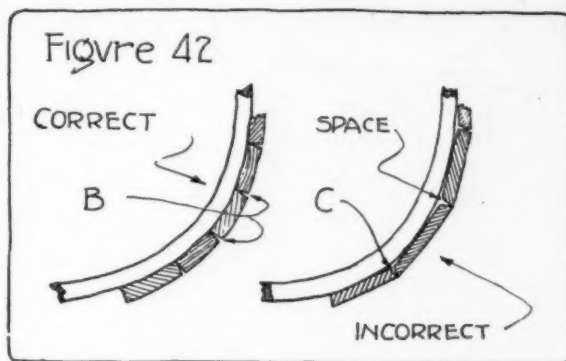
A properly planked boat should show a perfectly smooth exterior



Varying widths of planking as used in small boats of about 20 feet



Butt joint where it is necessary to piece out a plank



Correct and incorrect planking at the turn of the bilge

Caulking with cotton is the work of experienced hands and a difficult job for the novice. There is, however, the alternative of using cotton wicking, material which looks like loosely braided soft string; several strands of this, depending upon the size of the opening, may be rolled into the seams with a caulking wheel. There is no special skill required beyond the knack of preventing the wheel from running out of the seam and into the grain of the planking.

Butts under water had best be caulked, also the plank ends below water at the stem: those above the waterline, however, should fit close and will do as well without caulking.

Seams after caulking are always payed, which means painted, with well thinned white, or red, lead paint. A brush like "D" in Fig. 43 is used for this purpose.

For the uninitiated I should say something about plugs. These are cut from various woods and are to be had of any marine hardware dealer. They are not like dowels with grain running lengthways. Rather the grain runs across them in order that when they are inserted they may be planed off as part of the planking. In other words the grain of the plug follows the grain of the planking.

Let me warn against driving boat plugs in forcibly: just push them in with light taps from a light hammer, and it is good practice to glue, varnish or paint to doubly secure their holding. Boat plugs are made in sizes from 5/16 inch in diameter up to 2 inches.

I am not going to say anything about planing off the planking now. Instead let us delve into other ways of planking a boat.

Within the last ten years, the years in which the V-bottom boat has developed, a form of planking, or perhaps I should say boat construction, has come into popularity known as "seam batten" construction.

In Fig. 44 the features of this are brought out. One sees immediately that construction of this kind is unusually strong and that by its use a boat may be built with frame spacing at far wider intervals than otherwise could be at-

tempted, and yet have a successful work. The battens are usually not so thick as the planking, but are always cut from oak or hard pine; thus all the seam edges have a solid holding ground. Added longitudinal strength is gained by the battens behind the seams, and altogether the system has much to recommend it.

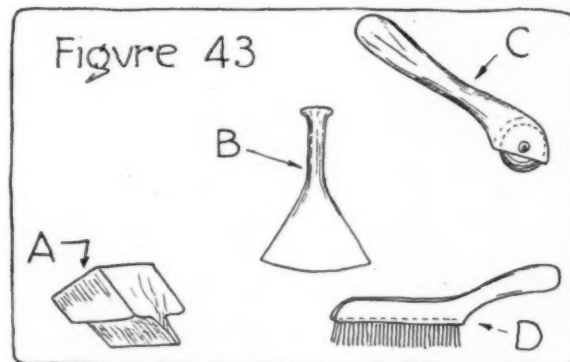
To my mind, though, seam batten construction is, except upon a V-bottomed boat, too difficult of fabric for the amateur.

Double planking, Fig. 45, has an appeal. Undoubtedly it creates a very satisfactory skin for a yacht and is not markedly difficult of construction. Even if indifferently applied, so long as the canvas interlayer is fitted well, and painted, there is small chance for leakage, which is one of the larger bugbears of the novice. A leaky boat is a nuisance to say the least. Planking of this kind at its best is always laid diagonal: the outer skin fore and aft: inner skin from keel to deck and so laid as to cross the frames at an angle of approximately 45°. In addition to fastenings into the frames one layer of plank is joined to the other with copper rivets between the frames.

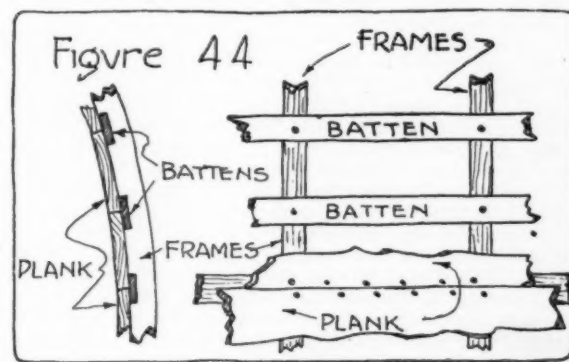
Particularly adapted for the small dinghy is lap-streak planking, Fig. 46. For small craft in which lightness, water-tightness, and strength are requisite lap-streak construction is ideal. Also it has the advantage of remaining water-tight even though hauled out of the water for days at a time. This feature is necessary for the dinghy which is out of the water quite as large a part of the time as it is in.

While the streaks lap at their full thickness throughout the middle sections of the hull at the bow, and, usually, at the stern each plank is rabbeted as shown at "A" in Fig. 46. This rabbet is cut tapering fore and aft for a length along the streak of perhaps 18 inches. Without a rabbet of this kind it would not be possible to come to a finish at the bow or at the stern.

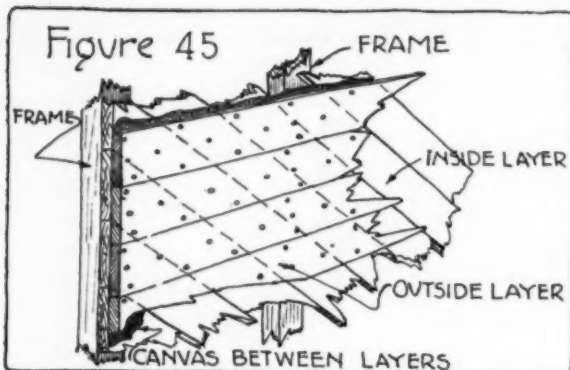
In craft which are built with cut frames the plank is fitted snugly as at "B", Fig. 46, but in those built with steam bent frames an opening as at "X" remains in back of part



Caulking tools commonly used in small boat work



Newer method of planking called seam batten construction



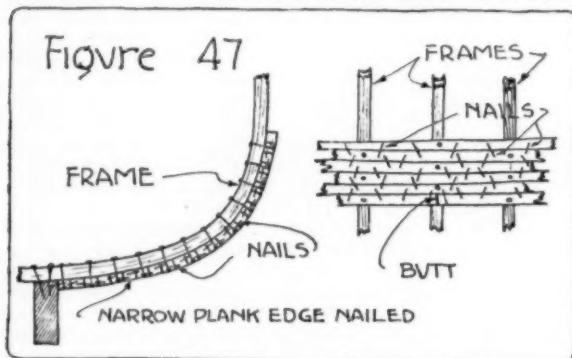
Diagonal planking is much used for light hulls such as racing craft require

of each streak. In addition to fastenings, which by the way are always copper rivets in lap streak boats, through the frames smaller fastenings spaced even as close as 3 inches grip the laps between frames.

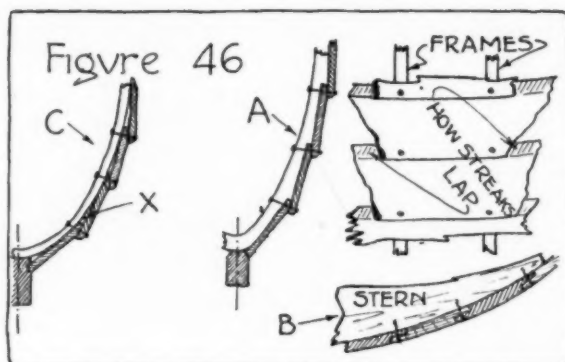
Famous for strength and simplicity of building are the Hampton boats built Down East.

These are planked with very narrow streaks all of similar dimensions, but so tapered fore and aft that an equal number of streaks cover the midship as well as the end sections. Caulking is not used but in its stead each streak is edge-nailed to its fellow as shown in Fig. 47. Application of the planking begins at the keel. Planking which is $\frac{3}{4}$ inch thick should not be wider than $1\frac{1}{2}$ inches at the center of its length. Butts, if there are any, should land on a frame and should not be closer than 3 feet from one another.

It is entirely possible to lay narrow plank, edge nailed, which is all of one width and so long as it is painted to so help cover the seams the completed craft will be satis-



Narrow widths of planking can be edge nailed and used without caulking



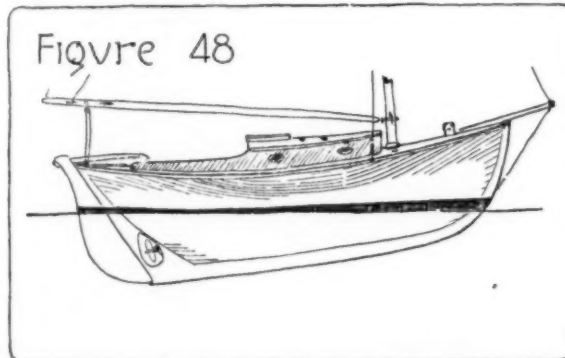
Lap-streak planking is used principally in small boats such as dinghies, etc.

factory. By laying plank in this manner the streaks will extend as shown in Fig. 48. This to some boatmen is entirely wrong; though after all, so long as good workmanship goes with it, and a neat finish is presented at completion, and that the hull is water-tight; and that the boat is serviceable, what matters?

To the economical, edge-nailed planking should appeal, for there is practically no waste. A large item these days.

Having thus reviewed the four major methods of planking a small boat, let us not forget that numerous combinations of any of them are possible and in some instances desirable.

I had intended this month to take up in addition to various methods of planking, notes on how to take spillings, also the making and fitting of deck beams and engine beds, but find that, for this issue of MoToR BoatinG, space forbids so I shall present these items of small boat building in the December number.



Planks all of the same width will give this result, which is a little unusual

A. P. B. A. Makes Changes in Fisher Race

Article VII

(u) Competing boats shall all receive their fuel from the same supply to be designated by the Race Committee.

Article VII

(v) Only minor repairs to hull, power plant and accessories shall be allowed. The Racing Commission of the A. P. B. A. shall designate what constitutes minor repairs. Allowable repairs shall be made only by members of the crew and shall be made during racing time. Parts and Materials used for minor repairs shall be taken from those carried aboard the boat during the race. Exception: Should an accident cause injury to the propeller or hull which in the judgment of the Race Committee was not due to faulty material, design or workmanship, they shall have power to permit repairs to be made to such parts by the method most suitable in their judgment.

RULE VII—Paragraph (E)

A boat not finishing any heat within one hour after sundown shall not be permitted to start in subsequent heats

unless in the judgment of the Race Committee the reason for the boat's non-finish was not due to faulty material, design, workmanship or other reasonable cause, then the Race Committee may permit the boat to start in the next heat. However, the boat shall receive no points for the heat in which she did not finish but shall be counted as a defeated boat for that heat.

RULE VII—NEW PARAGRAPH

(x) A boat upon crossing the finish line of any heat shall immediately report to the Race Committee and shall be under the absolute control of the Race Committee until 10 minutes before the preparatory signal for the next heat. During the time the boat is under the control of the Race Committee no changes, repairs, adjustments or work of any nature upon the power plant, hull or accessories shall be permitted with the exception of fuelling. Owners shall place their boats at the entire disposal of the Race Committee.

(Continued on page 80.)



Mauser III of Chicago, claimed to be the fastest runabout ever built

How Fast Can a Runabout Go?

Varied Opinions by a Number of Authorities—What the Race for the Fisher Trophy Is Expected to Develop in Hulls and Power Plants

EVERY owner of a motor boat, be it big or small, is interested to a more or less degree in the engine in his boat. He feels that his power plant has a certain duty to perform—a responsibility. Upon the confidence which the owner has in his plant to function properly under each and every condition of sea and weather depends his pleasure and enjoyment afloat.

Marine motors have always had a reputation, although not justified in every instance, by any means of being unreliable, poor in design and workmanship and years behind the times. In nine cases out of ten, it is not the marine motor which is at fault. Faulty installation contributes more to failures than poor design and workmanship. The question that is invariably asked is "why is it the automobile engines stand up so well while the marine motor repeatedly fails and causes an infinite amount of trouble that should have been foreseen before the motor left the factory". Those who have been led to believe that an automobile engine would be a success in a boat and have tried it out and have seen what a failure it is, know the answer to the above query full well.

There has developed a desire for more speed in runabouts and express cruisers. An entirely new type of boat has made its appearance this year which we shall call, for want of a better name, hydroplane cruisers, for this is just what they are. Combined with this desire for more speed is the demand for better accommodations, more comforts, better sea-going qualities and the like. Running neck and neck with this development in hulls we find the several live marine engine manufacturers of the country alive to the situation and bringing out models and improvements in their power plants which will assure the success of the whole outfit.

We now have a hydroplane cruiser which can maintain a speed of better than 35 miles an hour, day in and day out. With our express cruisers a speed of 25 miles an hour is the rule rather than the exception. Runabouts having a speed of 30 miles an hour with seating accommodations for six or more persons and all the improvements of the modern motor car are the result of the general demand for such comforts.

The next step in advance is the 40 mile-an-hour runabout. Is it a practical possibility? Some say "Yes" and others are very doubtful. But the fact remains that there soon will be a demand for a 40 mile runabout and the marine engine manufacturers and naval architects are ready.

As to the demand for the 40 mile runabout, one ardent sportsman believes there is a big field ahead. This man, Carl G. Fisher of Indianapolis, has given a \$5,000 trophy to the American Power-Boat Association to be awarded to the fastest runabout in this country. The main object in offering this trophy is to develop a fast, seaworthy, safe, comfortable runabout which will not be a racing machine in any sense. While speed is not the main objective yet the rules for the race provide that only runabouts which can show a speed of 40 miles an hour may compete for the Fisher Trophy. There are a few other requirements, such as the boat must be longer than 32 feet in length, must have a seating capacity for at least four persons, the motor must be equipped with self starters and exhaust at the stern. Another of the most important requirements is that the motor or motors must be stock marine models. Airplane or special engines will not be permitted.

Another requirement is that no repairs will be permitted on the power plants at any time during the three days racing.

The boating public over the whole country is talking about this race, the first one of which will be held at Detroit, Michigan next summer. Discussion is to be heard on every side as to what the developments will be.

Generally speaking, the public and industry as a whole approve of the terms of the Deed of Gift and are enthusiastic about the kind and type of runabouts it will produce. However, there are a few motor boatmen, naval architects and engine manufacturers who are skeptical about the 40 mile an hour speed. They believe that it is too big a jump from the 30 mile an hour runabout of today to the 40 mile boat next year. These people feel that it will mean sacrificing some of the excellent features which the race is supposed to produce in



Carl G. Fisher of Indianapolis and Miami, Fla., the man responsible for creating this great interest in high speed runabouts

the hulls and power plants and tend to develop a flimsy craft on which a chance will be taken to win but which will be of no use before or after the race. Of course if such a condition develops, the whole object of the race will be defeated for the one and only intent in formulating such a race is to develop reliability in hulls and power plants and produce a sensible boat for the man who desires speed and comfort.

MoToR Boating being instrumental in drawing up the terms of the Deed of Gift governing the Fisher Trophy and wishing to get the ideas of all authorities in this question of speed addressed a letter to all prominent naval architects and builders asking for their opinions as to whether a 40 mile runabout would be a practical possibility for next summer. Their opinions differ widely so we must ask the reader to draw his own conclusions.

Below are published the letters as well as the replies:

Is a 40-Mile Runabout Possible and Practical

Various Opinions by Naval Architects

Copy of letter sent to principal naval architects and marine engine manufacturers by the editor of MoToR Boating.

"I am wondering if you would mind giving me a frank expression of opinion as to whether you believe a practical runabout of over 32 feet in length is possible with the marine motors which are available at present, which could be built to run at a speed of 40 miles an hour or better. I want this data in connection with the Deed of Gift governing the \$5000 trophy offered by Mr. Carl G. Fisher on which I am working for Mr. Fisher, and the American Power-Boat Association.

"The Deed of Gift, as it is drawn up, requires that for a boat to be eligible to compete, she must demonstrate that she can run at a speed of 40 miles an hour for at least one mile. Quite a number of persons are contemplating building boats for this race but there seems to be some doubt as to whether a serviceable runabout can be built to make 40 miles. Surely few if any have shown this speed yet.

"You will probably remember that the whole object is to develop a fast and sensible boat which will be of use for other than racing purposes. Besides requiring that the boat must be more than 32 feet in length, it limits the piston displacement of the power plant to 3000 cubic inches. This may be in one unit or distributed in two or more. Aviation motors are of course barred and the hull must be stepless.

"What would be your ideas as to the proper length of boat to make a 40 mile runabout and what horse power do you figure would be necessary to drive a boat of your design of that length at that speed?

"I am writing to a number of designers for their ideas. Of course if we find that 40 miles is out of the question, we will want to change the Deed of Gift at once before it is too late."



G. A. Wood of Detroit, Mich., owner of the Miss Detroit, the fastest hydroplanes in the world and who says he expects to own the fastest runabout also



Commodore A. L. Judson, president of the American Power Boat Association, who is doing much to promote motor boating.

(From C. C. Smith, Algonac, Mich.)

In reference to your letter you state "I am wondering if you would mind giving me a frank expression of opinion as to whether you believe a practical runabout of over 32 feet in length is possible with the marine motors which are available at present, which could be built to run at a speed of 40 miles an hour or better."

I have spent all the money that I could make, beg or borrow in experimenting with boats and I really do not believe that there are more than two boats in the United States today that could show a mile at the rate of 40 miles an hour, outside of the hydroplanes, with any marine engines that have ever been made.

I would not take a contract from anyone in the United States right now to build a boat longer than 32 feet with any marine motor that I know of, with a guarantee of 40 miles an hour for \$50,000 because I am frank with you and do not believe it can be done at the present time.

I am going to end this letter by saying to you that I am waiting for some one to show me 40 miles per hour with a marine motor.

(From John L. Hacker, Detroit, Mich.)

We have at the present time motors available that will produce real 40-mile boats. For instance, the new Sterling which is a six-cylinder 5 1/2 x 6 1/2. This has four valves and the six will deliver close to 250 H. P. I can positively produce either, design or boat, that will qualify in making at least 40 miles over a mile course,—in fact close to that average over a

course. As a base, I have the Hoosier IV. This boat actually did do 39 1/2 miles over a course which Mr. Duckwall had surveyed here on the river, at 1600 R. P. M. On one trip the motor ran up 1645 and 40 1/2 miles was attained. At Miami, I think you know or Mr. Duckwall will tell you, that the most they were able to get was from 1450 to 1525. At one time 1575, and they made 38.3. When she made her record, she was turning 1425. This motor was a regular motor except that we had larger valves and a few little changes. It delivered 160 H. P. and 1600. Now, weight for weight, and from 75 to 90 more H. P., I think that you can readily see that a 40-mile boat is quite possible.

With the Hall Scott motor, the "NEverthin'" has done over 40 miles on the straightaways, with four passengers. This of course is only a 28 foot boat and of course lighter. It is just possible that a boat that would qualify on 40 miles could be attained in the required length. Two of these motors would produce a legitimate 45 mile boat. The Hall Scott is a standard type marine motor. So there

(Continued on page 54)

Murelett: an 85-foot Houseboat

One of a Pair Recently Completed by the New York Yacht, Launch & Engine Co. now on its Way to Florida

Photographs by International Film Service.

THE last word in houseboats — Murelett — owned by the New York Yacht, Launch & Engine Co., of Morris Heights, N. Y. She is one of two boats built during the past summer by this company and is under charter to J. Stewart Barney, of New York City. Intended for general comfortable cruising on both northern and southern waters, Murelett is now on her way to Florida to begin on the southern end first. It is proposed to linger on the waters of Chesapeake Bay and Albemarle Sound and reach Florida in time for a month there in January.

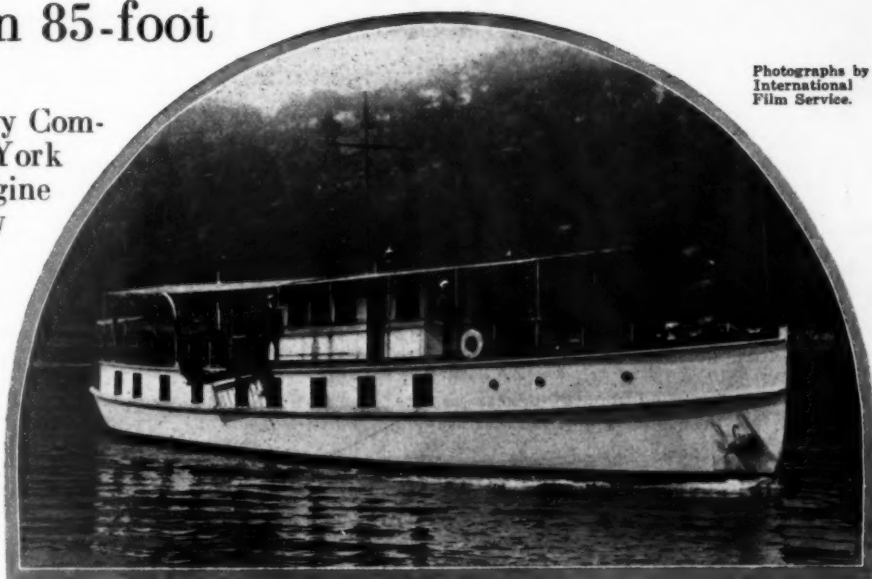
Five large staterooms make up the owner's quarters, of which two are large double rooms as illustrated. The dining saloon and galley are situated on the most comfortable part of the main deck and in addition there are three complete bathrooms. The interior trim is entirely in

white enamel with mahogany furniture. Furnishings and draperies to match are also supplied.

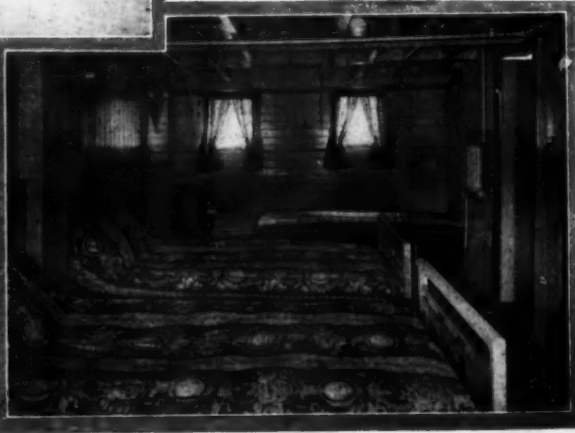
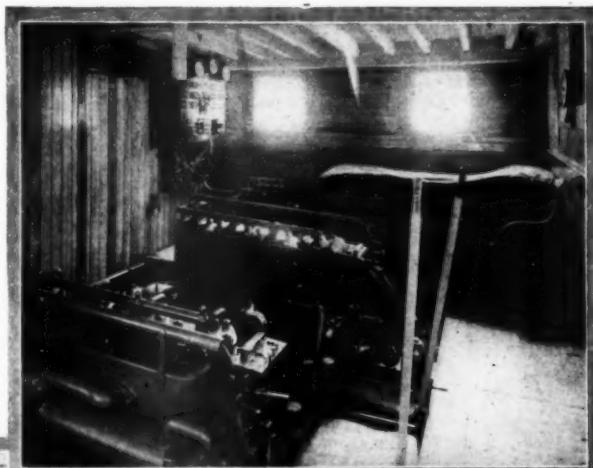
The engine-room is aft together with the crew's quarters. The power plant consists of a pair of 50 h.p. four-cylinder 6½x8½ Twentieth Century engines and full electric light is provided by a direct-connected Universal set. Hot water heating takes care of cold weather, and all plumbing fixtures are supplied with hot and cold water.

Murelett is 85 feet long by 19 feet beam and 3-foot 6 inches draft. She carries full cruising equipment which includes a power tender.

She is a type of motor boat which is rapidly becoming very popular among yachtsmen who prefer comfort and luxury to speed, large and seaworthy enough to go anywhere and yet of fairly shallow draft to permit taking the inside routes when they are preferred. By using twin-screw installations it is possible to save considerable in the vessel's draft which is of considerable importance when the question of southern cruising is involved. Twin-screws also make the craft more readily handled in shoal water and when navigating the crooked and winding channels.



Ample room in engine compartment keeps the engineer contented



A Saloon on the main deck provides most excellent lounging space

The Owner's Stateroom, giving a good idea of comfort and Spaciousness

My Ideal Auxiliary

No. 10, Indrashama. a 35-foot Schooner

By Thomas Moore

THERE are a number of very fortunate boat sailors whose home port is so situated as to afford attractive sailing from the moment the mooring is dropped. Many enthusiasts are, however, obliged to keep their boats in locations which require several miles to be traversed before conditions become suitable for progress under sail alone. Auxiliary power in the form of a reliable gasoline engine is a most desirable feature under these latter conditions. While no attempt has been made herein to produce a single-hander or a boat calculated to duplicate the performance of "Spray," a design of moderate size has been chosen upon which the work of upkeep can be brought down to a minimum. Some men have turned to the small boat—not so much through necessity as through choice—and the desire to more thoroughly enjoy all the various phases boating affords. Some men have gone a step further and insisted that the single-hander afforded enjoyment not attained in other types. After the general size of the boat has been decided upon, the point to be determined is whether sail or engine power is to be the principal driving power—or whether endeavor shall be made to obtain a nicely adjusted compromise of the two powers. An attempt has been made in the accompanying design to pursue the latter course. This procedure has

necessitated heavy sacrifices to the sailboat and to the motor-boat types, but has resulted in added facilities for the use of either mode of propulsion.

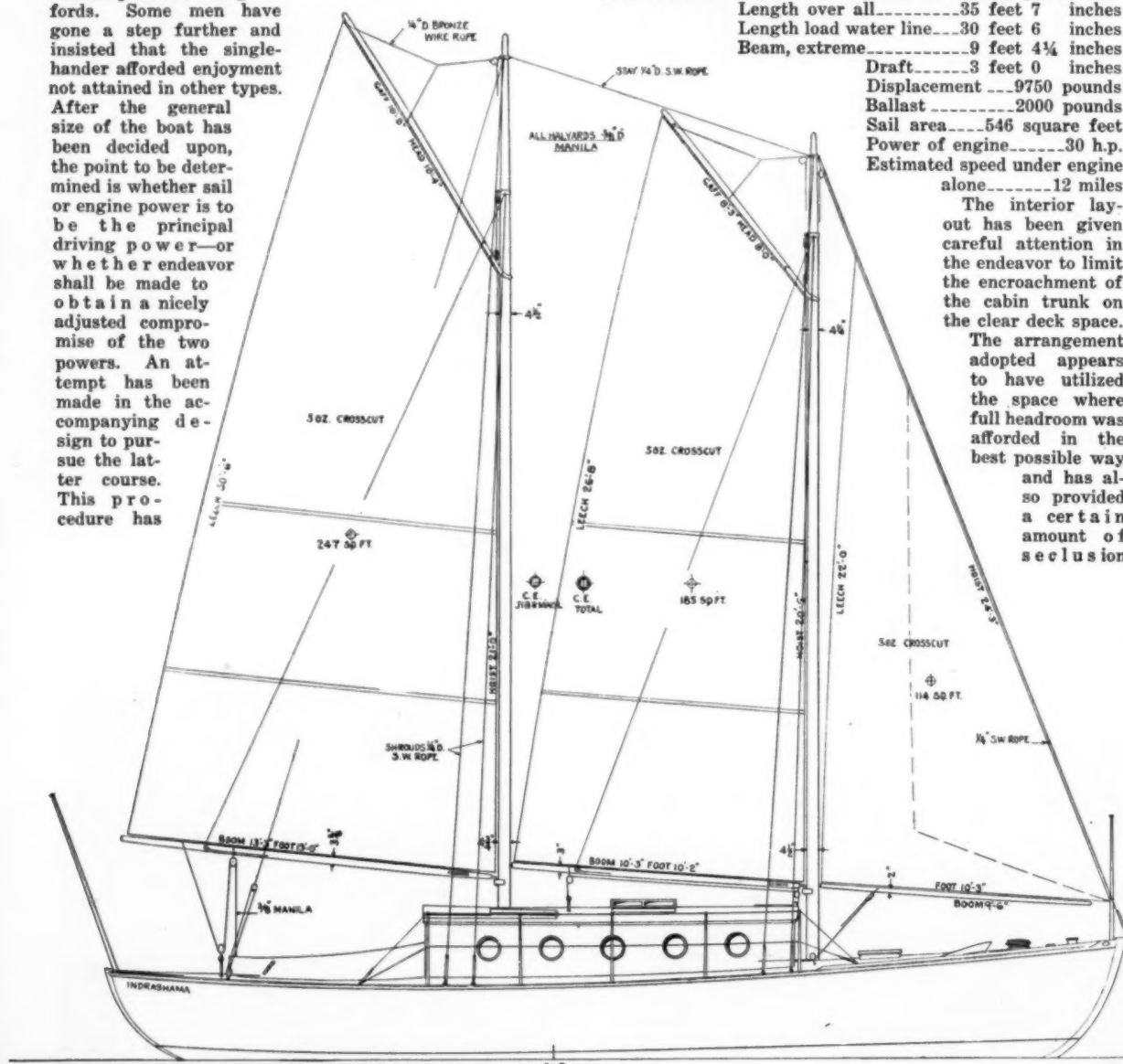
As our Auxiliary was planned to be fifty per cent motor-boat, the deep keel, large wetted surface and large amount of ballast of the sailing type were discarded as being too great a handicap for work under engine power. On the other hand, the double wedge form of hull, the light displacement and lofty topsides of the cruising motor-boat which have been developed by the combined requirements of speed and comfort must be acknowledged as unsuitable for work under sail-power alone. Thus the proportions of the form of our auxiliary were developed moderately in all respects.

In the accompanying design a head-room of six feet two inches in the main cabin was made a principal requirement, and this with the other foregoing requirement as to proportions of hull have given us a boat of the following elements:

Length over all	35 feet 7 inches
Length load water line	30 feet 6 inches
Beam, extreme	9 feet 4 1/4 inches
Draft	3 feet 0 inches
Displacement	9750 pounds
Ballast	2000 pounds
Sail area	546 square feet
Power of engine	30 h.p.
Estimated speed under engine alone	12 miles

The interior layout has been given careful attention in the endeavor to limit the encroachment of the cabin trunk on the clear deck space.

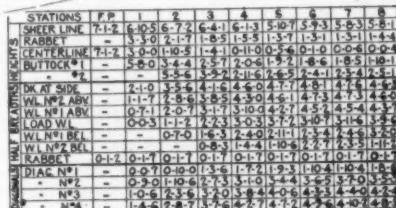
The arrangement adopted appears to have utilized the space where full headroom was afforded in the best possible way and has also provided a certain amount of seclusion

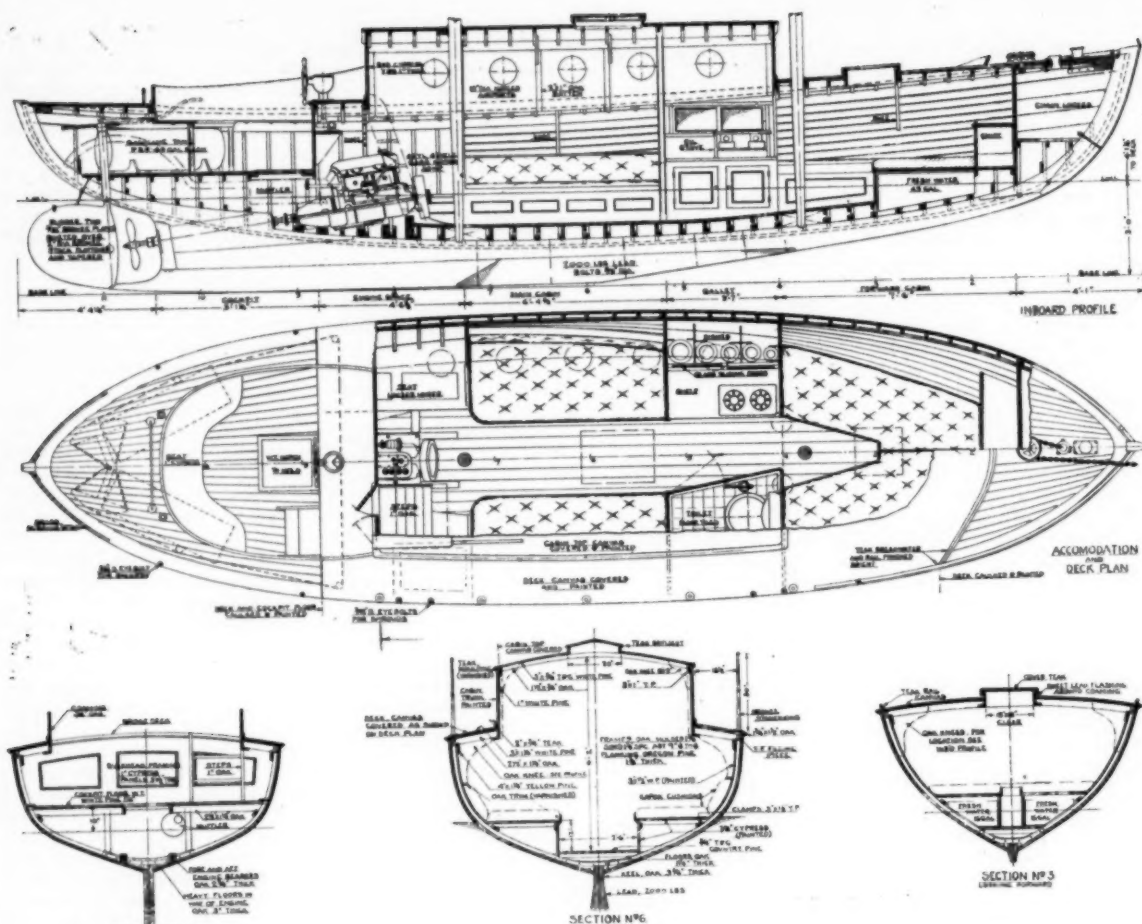


Outboard profile of Indrashama. Scale 3/16 inch = 1 foot

This point in the discussion of the accompanying design brings us to the question of rig. For cruising work, and especially for small auxiliaries, the yawl rig has generally been given preference over all others. There are a number of excellent reasons for this, chief of which are the ease with which sail may be shortened and the good balance obtained sailing under jib and jigger. This may also be said to be a feeling of security for offshore work afforded by

The rudder is made rather large to make up for the loss of effectiveness due to the propeller aperture and the con-





Inboard profile, arrangement and sections 35-foot schooner Indrashama. Scale 3/16 inch = 1 foot

sequent disturbance in the streamlines caused by the propeller when the boat is under sail alone. A stout backing chain is provided on the rudder as well as the usual stops on the steering quadrant. A hole is to be provided in the rudder for withdrawing the propeller shaft aft, same to be covered with plates fastened with brass screws.

The propelling arrangement contemplates a four-cylinder, four-cycle engine of moderate speed with a serviceable electric or air starting device, also means for turning the engine over by a tommy bar. Reversing is to be done by means of a reverse gear, fitted integral with the engine. A suitable type of feathering propeller will be fitted. Engine controls will be led to the bridge deck and after cabin bulkhead adjacent to the steering wheel. An iron tiller for fitting upon the head of the rudder stock for use in emergency—or if desired when under sail—is also provided.

A small brass pump will be fitted in the galley for obtaining water from the fresh water tanks shown on the plan. A two-hole kerosene stove is shown secured upon the galley shelf. A small china closet with sliding glass doors is placed outboard and an ample closet for utensils and provisions is shown beneath.

In the toilet space a motor-boat type pump closet is fitted and folding lavatory with pump installed above.

The ice box is installed abreast of the companion steps on the starboard side and is of good capacity.

In order to obtain the maximum amount of space in the cockpit, the floor is carried out to the outside planking and stop check valves fitted in the drain pipes to prevent water from backing up in the cockpit when the boat is heeled under sail.

While it was considered desirable to keep the interior of the boat as open as practicable, the partial bulkheads used partitions for dividing off the various spaces are to be made sufficiently stout to act as adequate thwartship bracing and prevent racking of the transverse frame, particularly be-

tween stations four (4) and eight (8), as the main deck beams of course stop at the side of the deck-house throughout this section.

In regard to finish, it is proposed that there be as little exterior bright work as possible, and where varnished, the wood shall be of teak—thus the rail and breakwater forward; the moulding around the edge of the cabin top and the companion slide, cabin doors and skylight, varnished; and the remaining work, suitably painted. The cabin top and the deck, in way of accommodation spaces is shown canvas covered—as being less liable to leak than the regular caulked seams of the deck planking. The canvas is omitted at the ends where the regular deck planking caulked and painted will, it is believed, give less trouble to keep in good condition.

The sail plan and outboard profile are combined and the ensign and jackstaff are shown in position. These, of course, will be unshipped when under sail. With sails furled, an awning may be spread over the main boom to portable stanchions at the side, giving shade to the cockpit with sufficient headroom underneath to permit of standing upright. The fore and aft positions of the centers of buoyancy and lateral resistance of the hull and the center of effort of the sails are shown on the lines—and the form of the boat indicates that she will maintain the desired trim when heeled—thus insuring that quality of balance which should make for successful performance under sail.

The comfort of the party aboard is well looked after. Cabin quarters both for sleeping accommodations and dining arrangements are ample with plenty of galley and refrigerator space.

Deck hardware is substantial, an anchor winch of the Viking type is used to handle the anchor chain which is stowed in the cabin locker in the forepeak. Altogether all details have been well thought out to meet the requirements of My Ideal Auxiliary.

From Chicago to the Sea De Luxe

Great Lakes Cruiser on a 3000 Mile Cruise from Builder's Shops at Milwaukee to Home Waters at Houston

ON board yacht Ranger, bound for Houston from Chicago via the Mississippi: Hughes of Houston, having a passion for the water and a right smart bit of loose change lying about, said to Wm. C. Morehead, president of the Great Lakes Boat Bldg. Corp. of Milwaukee, "Build me the tastiest, fastest, latest thing in motor yachts, and I'll take her home myself." Hughes of Houston being a man of as few words as will politely convey his meaning.

In sixty days the result was the yacht Ranger, in whose cockpit, and enveloped by the softest and most salubrious bucolic scenery, I am now lolling, and trying to concentrate on the production of something instructive concerning the latest development in motor yachts.

Having paid Morehead's bill, Hughes of Houston was at liberty to swing away from Milwaukee, a thing which he did with an enthusiasm that amounted almost to abandon.

Down Galveston and Houston way, and throughout the Texas oil region generally, everybody knows Howard R. Hughes, for he is president of the Hughes Tool Company, which makes a rotary bit that does wonders in the work of drilling for oil—which is as far as I dare go in analysis of machinery or the parts thereof. Up in our part of the country Hughes of Houston would be more readily identified as elder brother of the high-power, not to say passionate, publicist and playwright, Rupert Hughes, of New York.

Such biographical detail sufficing for the present, we will dip briefly into matters of boat building and navigation.

This Ranger, with which Hughes of Houston purposes toying with some 3,000 miles of artificial and natural waterway, and salt water, connecting Chicago with Houston, is the latest pattern in a new type of motor boat, and on all counts a significant proposition architecturally, commercially, and socially. Not that it is commercial, but certain of the principles inherent in it will have a big commercial application when the problems of cheap transportation by water that confront Chicago are finally worked out.

As a social proposition Ranger is important, or will be when men in Chicago awake to the fact that at their doors lies the gateway to the finest river cruising in the world—the finest scenically, historically, educationally, and patriotically.

In effect, Ranger is a floating automobile, even to the Klaxon, and with all dirt, smoke, and slip-slop banished. In type it is a standardized express cruiser. Hence, by

reason of standardization, such a boat can be fabricated in sixty days, where, under old conditions, the building of it would have consumed five months. It carries 260 gallons of gasoline, and that filling will take her 200 miles in a shade under 9 hours. You could easily get from Chicago around into Lake Huron in it in 15 hours. It can do 25 m.p.h. without getting hysterical about it, and, with her two 150 h.p. engines capable of 1,400 r.p.m., it can touch 27 m.p.h. It is good for a mile on less than a gallon and a half of gasoline.

Her dimensions are 52 feet long, 11 feet 2 inches beam, draft 34 inches, displacement 22 tons, gross tonnage 17½; comfortable accommodations for eight persons and a crew of two; own electric lighting plant and electric fans; refrigerator capacity, 250 pounds of ice; a great big three burner alcohol stove in the galley and plenty of locker and cupboard space.

The high points of the Ranger's type are:

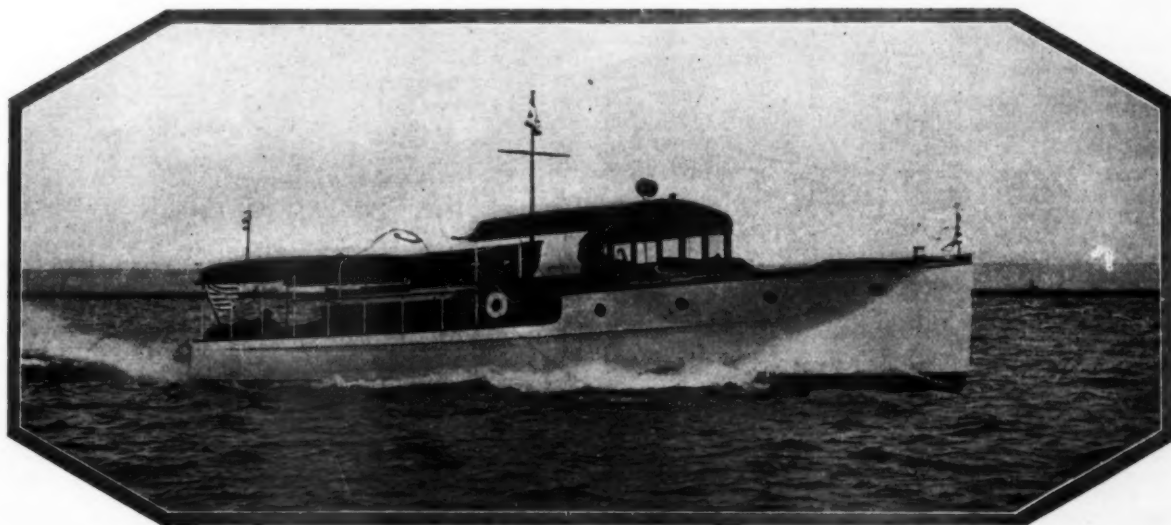
It is equipped with one-man control, from the bridge exclusively. Here the owner has all his engine controls, steering wheel, binnacle charts, etc. right at hand and easy to reach and use. No bell ringing or tooting, or going below. Just ahead of the control station is a full width windshield extending entirely across the boat. This is instantly adjustable to any position.

Seaworthiness and safety. They say you can't make it take any green water over its bows.

A good turn of speed is the big development of this V-bottom or wave-collecting type of express cruiser. They have long been able to build pleasure boats that were seaworthy and roomy and comfortable, but they did not simultaneously get the good turn of speed. So this express cruiser type has been originated and defined and developed within the last five years by Walter Beauvais, and is now the accepted type.

The first express cruiser embodying the Beauvais and Morehead ideas was built in 1914 for Alfred I. Dupont, of Wilmington, Del. (Dupont of the powder people). Since then some sixty have been built by the Moreheads, who are the largest builders of this kind of craft in the country. Every one of them was in the war patrol service, the government taking them over on account of their speed. They did good work.

Laden with which information I started on my 3,000 mile boat ride through corn and cotton to the gulf.



Ranger, the Great Lakes cruiser, which is making a cruise from Chicago to the sea



Joseph Van Blerck who has perfected a new marine engine

J. V. B. Engine

An Entirely New Design of Power Plant with an Innovation in the Way of Clutch and Reverse Gear Control and Operation

This latest type of marine engine developed by the J. V. B. Engine Co., of Monroe, Mich., embodies many of the most modern features and ideas perfected during the last year or two.

The cylinders are sleeves securely pressed into position in en bloc casting. This arrangement provides a maximum of water circulation space and efficient cooling. The valves are interchangeable and arranged so that they may be easily ground. Cylinder heads are readily removable in order to facilitate the necessary operation of removing the carbon deposits formed by low-grade fuels. The combustion chamber is machined to insure the same size for all cylinders and leave no rough spots for carbon deposits to accumulate.

Lubrication is provided by a gear pump forcing oil to all parts from storage sump and reservoir in the lower crankcase pan.

Chrome nickel steel is used for many of the parts under stress wherever possible. Connecting rods are extra long to reduce side thrust on cylinder walls.

Piston rings are semi-steel, all carefully machined.

The chrome nickel steel crankshaft is extra large, 2½ inches in diameter and is extra hard, at least one-third harder than the carbon steel shafting. The fly-wheel is carried on the after end of the engine where it does the most good.

Wrist pins are high grade steel, 1½ inches in diameter and of ample size. Helical gears are used through-

out for driving timing shafts and auxiliaries, insuring quiet operation.

A two-unit electric starter and generator of standard type is fitted, operating at 12 volts. The standard S. A. E. equipment, that is, battery, starting switch, automatic cutout and ammeter is supplied with it.

An unusual feature is the clutch and reverse mechanism, which approaches the automobile type. A multiple disc clutch of extra large size capable of carrying twice the power developed by the engine, transmits the power to the shaft, through the reverse gear box.

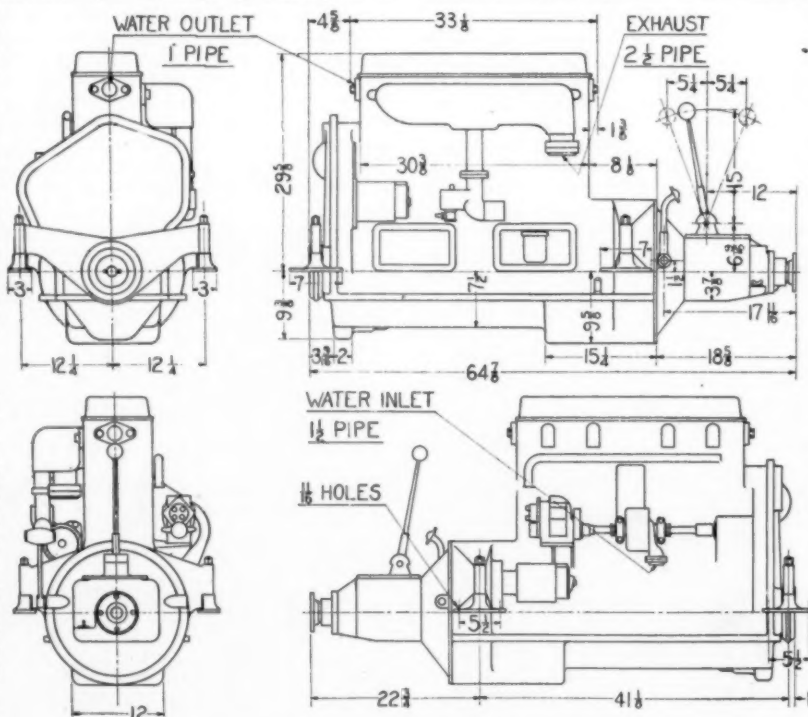
A very simple adjustment is provided to compensate for the very slight wear. The operation is by a fast pedal which can be located on either side of the engine. An especially designed reverse gear of the sliding gear type is so

mounted that the housing can be readily removed for inspection and oiling. A jackshaft mounted on ball bearings carries gears for the forward and backward motions.

This gear will operate in either position at full load for an indefinite time and has an absolute neutral point. The operation is the same as in an automobile, the lever having one speed ahead—one astern and neutral.

A standard high-tension magneto with impulse starter is installed with a battery distributor optional.

Bore 4¾ inches, stroke 6 inches, four-cylinder developing 50-60 h.p.



Side and end views and principal dimensions of new J. V. B. marine motor

at 1,200 r.p.m. and from 28 to 30 h.p. at about 600 r.p.m.

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

Commuting by Water

A new type of express cruiser has recently been brought out by the Consolidated Shipbuilding Corp., formerly the Gas Engine & Power Co. & Chas. L. Seabury & Co. Cons., of Morris Heights, N. Y., which is particularly well adapted for use in both northern and southern waters. This boat is attracting much attention by reason of its striking appearance. The deckhouse forward together with the raised cabin aft followed by a comfortable cockpit makes a most attractive arrangement. A speed of over 27 miles is developed by means of two eight-cylinder 200 h.p. 5½x7 Model M Speedway motors. This craft makes an admirable combination for business men to commute from their country homes to the city. Commuting by water in small craft is becoming more popular constantly. The Consolidated company has developed a design to suit the desires of those who wish to travel in this way. The country home on the water within a 30-mile radius is made accessible to the city by this type of boat. Several of these 52-foot commuters will be used in Florida waters this winter where high-speed is necessary in order to get to the fishing grounds expeditiously.

They will come north next spring and be used on Long Island Sound for commuting purposes by their owners.

Sterling Motor Wins Prince of Wales Medal

The Prince of Wales medal won by Leopard I at the Canadian National Exhibition Regatta, Toronto, on Labor Day, September 1, is pictured herewith. This handsome trophy was awarded Griffith B. Clarke, of Toronto, the owner of the boat. Leopard I is a 30-foot V-bottom runabout powered with a Sterling Six rated at 145 h.p. and developing a speed of 33 m.p.h. during the races.

Another boat owned by Mr. Clarke is Leopard III, a hydroplane, which holds the present Great Lakes Championship established on September 9, also at the Canadian National Exhibition. This craft is a 20-foot hydroplane powered with an eight-cylinder 250 h.p. Model R Sterling racing engine. She failed to win the Canadian International Trophy on account of a series of unfortunate mishaps.

Wm. E. Gibbs— Salesman for Frisbie Valve- in-head Motors

From guiding tanks in the trenches to guiding the sales of Frisbie Valve-in-head Motors is a long step. This has just been made by



Wm. E. Gibbs, salesman
for Frisbie Valve-in-head
motors

William E. Gibbs on his release from active service in the Tank Corps.

In securing Mr. Gibbs, as sales manager, the Frisbie Motor Company is certain that it has benefitted both itself and its patrons.

Mr. Gibbs had been engaged in the marine motor field before the war and sold several different makes of motors until 1915. From then until the outbreak of the war with Germany he was engaged in the sale of automobile tires and accessories.

He enlisted as a private at the start of the war and served as an enlisted man until the formation of the Tank Corps in 1918. Here his knowledge of motors stood him in good stead and won for him a commission in that branch of the service. From then until his discharge recently he served in various capacities and as Adjutant on duty at headquarters of tank corps.

A Satisfied Customer

A user of a unit power plant made by the Kermath Mfg. Co., of Detroit, Mich., is E. R. Secor, of Fond du Lac, Wis. He writes that his boat Oneida, 23x4½ feet, turning a 14x22-inch propeller can make 17 m.p.h. with its Kermath 16 h.p. motor.

New Course at Lehigh University

A four-year course in ship construction and marine transportation is offered by Lehigh University of South Bethlehem, Pa. It is intended to prepare men to take part in the design and construction of ships and later enter the field of marine transportation.

The last few years has seen a large increase in the number of shipyards and ship building, and undoubtedly this activity will continue for years to come.

This course will combine engineering with economics preceded by the usual fundamental subjects common to engineering courses, such as chemistry, languages, physics, and mathematics.

A surveying course is given for four weeks in the summer immediately following the close of the first year.

The second year takes up sciences and some preliminary work—engineering, drawing, and ship drafting are also given in the first and second year.

The Junior year devotes most of its time to fundamental engineering subjects—as Strength of Materials, Heat Engines, Dynamos and Motors, etc. The Senior year is classified under three divisions—Naval Architecture, Marine Engineering, and Economics. The latter embracing studies relative to Foreign Commerce.

Naval Architecture includes the design and construction of wooden, steel, and concrete ships and Marine Engineering treats of Marine Industries and Motive Power.

Graduates of this course receive the degree of Naval Engineer (N. E.). The entrance requirements are the same as for other engineering courses at Lehigh University and are such that graduates of high school and preparatory schools should be readily able to meet them.

For information concerning the course address the Registrar, Lehigh University, South Bethlehem, Pa.

New Sterling Racing Engine

A brand new racing engine is about ready for the market and the Sterling Engine Co., of Buffalo, N. Y., expect great things from it.



The Prince of Wales Medal, won by Leopard I, a Sterling powered craft at the Canadian National Exhibition regatta at Toronto



This Model G. R. is a racing engine and will be furnished in four-, six-, and eight-cylinder sizes. It is a dual valve-in-head engine 5 $\frac{1}{2}$ x6 $\frac{1}{2}$ inches bore and stroke. The four-cylinder develops over 150 h.p. at 1,500 r.p.m. and the six-cylinder will average about 225 and the eight about 300.

Their weight will run about ten pounds per horsepower based on their top power. They are to be provided with a cast oil filter combined with an oil cooling device, a cast air-pressure pump and cast cover plates over the flywheel, reverse gear, timing gears, and valve mechanism. This all provides very quiet running and a clean engine.

Electric equipment consisting of an electric starter and generator with a large storage battery will be included.

The ignition will be by means of a high-tension two-spark magneto and a distributor firing three spark plugs in each cylinder. Lightly fitted bearings are lubricated by a pressure system operating at high speed under about 30 pounds pressure.

The motor is very elastic and operates over a complete range of 350 to 1,600 r.p.m. and is said to be more powerful for its displacement than any other marine motor.

The Sterling Company expects that these models will be available by November. Specimen engines are now undergoing extensive tests, installed in a runabout, and will be given a thorough tryout so that all weak points will be discovered.

J. Murray Watts Returns

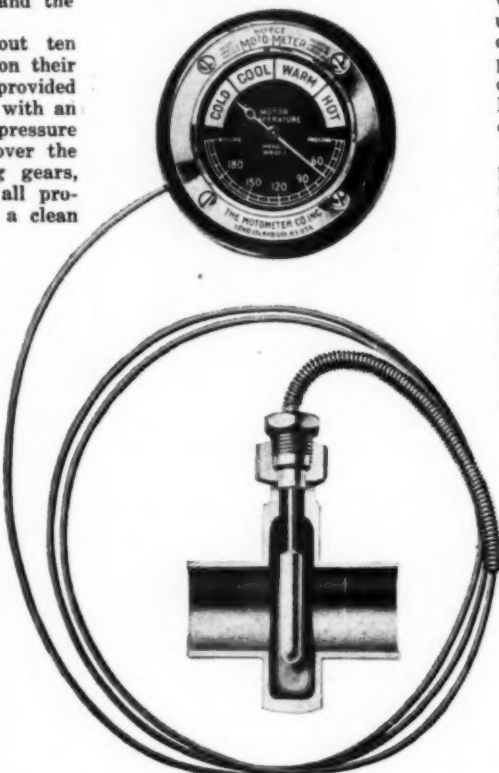
A neat little desk reminder announces the return from service abroad of Capt. J. Murray Watts where he commanded Company E, 57 Engineers, U. S. A., the Inland Waterways Regiment. Capt. Watts has resumed his former business in new offices at 136 South Fourth St., Philadelphia, Pa., where he is prepared to provide plans and specifications for sea-going and inland waterway types of commercial vessels, steam and sailing yachts, and motor boats of all kinds.

There have been built from plans by Mr. Watts numerous yachts and motor boats as well as a large number of commercial vessels for Government service in various departments during the war.

C. D. Mower Moves to New York

Among the recent newcomers to New York City is the well-known yacht designer, Charles D. Mower. He has left Philadelphia where he has been in business for the last several years and located new offices in the Equitable Trust Bldg., Madison Ave. at 44th St. Mr. Mower plans to specialize on yacht

work, his years of experience in the designing of racing yachts, motor boats and auxiliaries making him well fitted in this field. His new designs will be awaited with interest by the yachting world acquainted with his work.



Distance Type A Boyce Moto-Meter which will indicate circulation water temperatures up to 30 feet from engine

When the Navy Department called on Mr. Mower for his services at the beginning of the war the firm of Bowes and Mower was dissolved. Now, upon the completion of his Government work in the Bureau of Construction and Repair, Mr. Mower decided to return to New York among his many friends in yachting circles.

Many of the most successful racing yachts have been designed by Mr. Mower although he has had extensive experience with cruising boats both power and sail. He is a staunch supporter of the wholesome types of moderate speed and comfortable accommodations and believes that the tendency will be toward boats of this type rather than the express cruisers which are popular just now.

Revival of America's Cup Races

Get your motor boat or yacht now so as to be in time for the biggest yachting event for 1920. Sir Thomas Lipton, owner of Shamrock IV, has challenged through the Royal Ulster Yacht Club for another try at America's Cup.

The New York Yacht Club looks fav-

orably on this challenge and it can be said that the challenge will be accepted. The defending yachts *Resolute* and *Vanitie* will be put in commission early in the spring.

The question of dates and suitable waters for the series of races is already under discussion by the cup committee of the New York Yacht Club. Newport seems to be generally favored as offering the most suitable location. Probably the first contest will be held early in August.

Suitable motor yachts will be at a premium next summer and consequently the wise yachtsman will see to it in time that his yacht will be ready. Install that new engine right off and make all your difficult repairs and alterations before the yards are flooded with work. They can give better attention to repairs and alterations now than they will be able to undertake the construction of a new boat if plans are undertaken now. Think it over and act at once.

Bosch Notes

The American Bosch Magneto Corporation announces that Lieut. Victor Greiff, U. N. R. F., after two years service with the U. S. Navy, Bureau of Steam Engineering, including service as Radio officer of the lost cruiser, *San Diego*, and subsequently in radio development work has assumed duties as Research Engineer for the American Bosch Magneto Corporation of Springfield.

This company is making big strides in completing an extensive service organization which is to be the largest and most complete service organization in the industry. Fifty-eight new service stations have been opened recently all of which maintain a corps of well trained mechanics who have been trained at the Bosch factory.

A complete testing laboratory and special tools are carried to provide aid to those who may require it.

A. H. Bartsch of the company, recently stated that "because of the care in selecting these Service Representatives,



Oncida, a 23-foot runabout powered with a 16 h.p. Kermath Unit power plant

and the value that representing Bosch means to the Service Station, some of the best establishments in this country have taken on the Bosch franchise."


For the purpose of investigating the Export field, in particular its application to the products manufactured by the American Bosch Magneto Corpora-

(Continued on page 53)



The Waw Waw, a 30-foot mahogany cruiser, owned by Griswold A. Thompson, Roslyn, Long Island, N. Y. Built by Reliance Motor Boat Co., New York City. Finished with Valspar.

—Photo by Rosenthal, N. Y.

 **HE WAW WAW**, with her luxurious appointments, perfect equipment and one-man control, might be fittingly described as a sea-going limousine. She represents the highest development of the boat-builder's art.

And from stem to stern, wherever varnish is needed, *she is Valsparred*.

This means that her owner is insured against the usual varnish troubles, because Valspar is the ideal all-weather varnish.

Valspar retains its brilliance without

spotting, cracking or blistering, and it won't turn white.

If you own a craft of any description, Valspar will protect it from wind, weather, sun and sea, and keep it looking spick and span. Valspar is easy to apply and dries dust-free in two hours and hard over night.

Our handy booklet, "How to use Valspar on Boats," is full of useful "tips." A copy will be sent you free on request.

FOR your enamel work, use Valspar Enamels. They have all the desirable qualities of Valspar itself. Made in 12 rich colors and in black and white.

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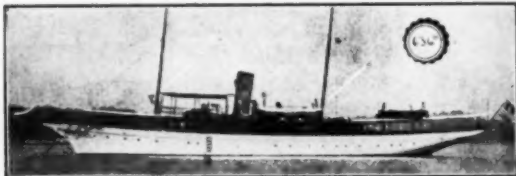
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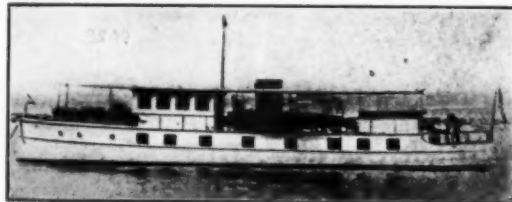
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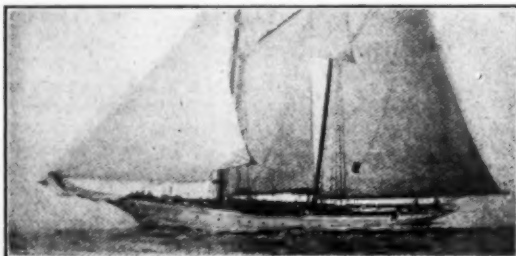
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.



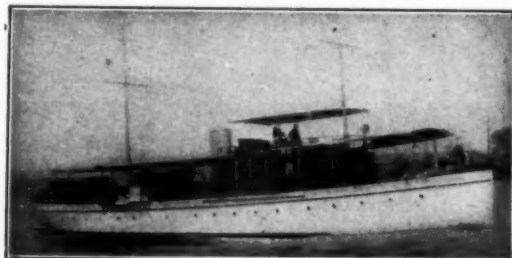
No. 636—For Sale or Charter—Modern 150 ft. steel steam yacht; most desirable of type and size available. Excellent accommodation; good speed. First class condition. Cox & Stevens, 15 William Street, New York.



No. 3225—For Florida Charter—Roomy twin-screw power houseboat; 80 x 16.7 x 2.10 ft. draft. Speed 10½ miles. Three double staterooms, saloon, toilet room, etc. Price reasonable. Cox & Stevens, 15 Williams St., New York City.



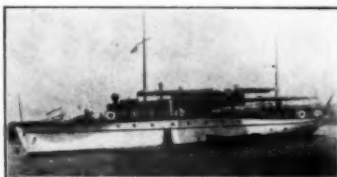
No. 148—For Sale—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall, 110 ft. waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9 knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William St., New York.



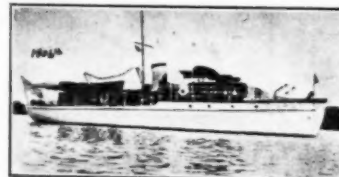
No. 1796—For Sale or Charter—Very roomy, twin screw cruising power yacht, 99 x 17 x 4 ft. Speed 13 to 15 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms, all conveniences. Cox & Stevens, 15 Williams St.,



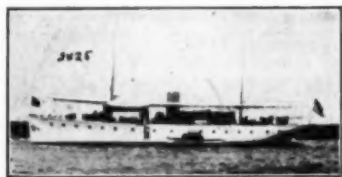
No. 2026—For Sale or Charter—Twin-screw cruising power yacht; 107 x 18 x 5.3 ft. Speed 11-12 knots; 75/90 H.P. Standard motors. Four staterooms, deck, dining saloon, bath and two toilets, etc. Recently completely overhauled at large expense. Cox & Stevens, 15 William Street, New York.



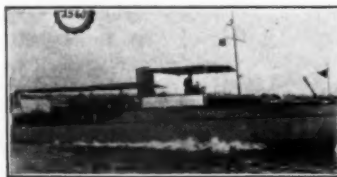
No. 1526—For Sale—Twin-screw cruising power yacht; 75 x 14 x 6 ft. Speed 12 miles; two 60 H.P. motors. Two staterooms, saloon, bath and toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



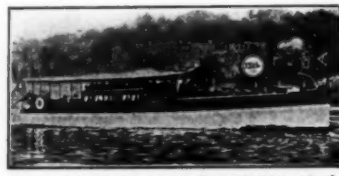
No. 1806—For Florida Charter—Twin-screw power yacht; 87 x 14.5 x 3 ft. draft. Speed up to 13½ miles; two 40 H.P. Sterling motors. Large saloon with two extension berths, two staterooms, bath and toilet, galley, etc. Roomy bridge deck and large cockpit. Price attractive. Cox & Stevens, 15 William St., New York.



No. 2425—For Sale or Charter—Twin-screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Now in commission. Cox & Stevens, 15 William Street, New York.



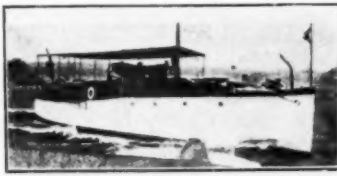
No. 2560—For Sale—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sits bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.



No. 3440—For Sale—Fast bridge deck cruiser; 55 x 8.9 x 3 ft. Speed up to 23 miles; 8 cyl. 200 H.P. Speedway motor. Two berths in cabin, toilet room, large cockpit, etc. Price attractive. Cox & Stevens, 15 William St., New York.



No. 611—For Sale—Twin-screw power yacht; 75 x 13.3 x 5.6 ft. Speed up to 13 miles; two 6 cyl. 70 H.P. Sterling motors, saloon, two double, one single staterooms, bath and two toilet rooms, galley, etc. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 3153—For Sale—Attractive bridge deck cruiser; 53 x 12 x 3.10 ft. Speed 11½ miles; 45/65 H.P. Sterling motor. Large saloon, double stateroom, two toilet rooms, galley, etc. Cox & Stevens, 15 William St., New York.



No. 3560—For Sale—Fast bridge deck cruiser; 45 x 10.6 x 3.6 ft. New 1917. Speed 18 miles; 125 H.P. 6 cyl. Sterling motor. Double stateroom, saloon, galley, toilet room, etc. Price reasonable. Cox & Stevens, 15 William Street, New York.

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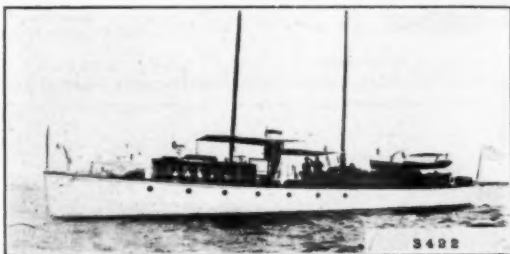
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We have a most complete and up-to-date list of power yachts of all sizes, sail, auxiliary and houseboats on file in our office, kept constantly up-to-date by a thorough and comprehensive canvass of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request. FOR SOUTHERN CRUISING this winter we offer a number of very desirable POWER HOUSE BOATS and POWER YACHTS which are specially adapted for FLORIDA waters



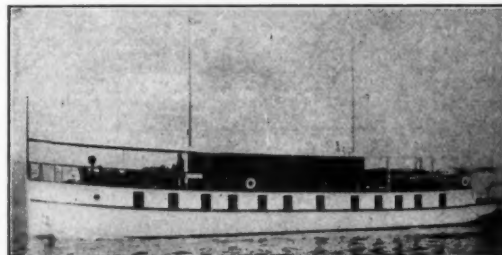
No. 3422—For Sale—Desirable 94 foot twin-screw steel power yacht. Deck dining room. Two double staterooms, bath and two toilets. Hot water heated. Standard engines. Speed 12 to 14 miles. Price reasonable. Gielow & Orr, 52 Broadway, New York City.



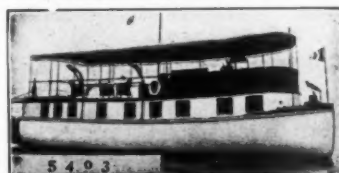
No. 5880—For Sale—Most commodious 107 foot cruising houseboat. Built 1917. Luxuriously furnished. Two double and four single staterooms. Three bathrooms. Hot water heated. New electric plant. Now in commission. Gielow & Orr, 52 Broadway, New York.



No. 4401—For Sale—137 ft. very attractive twin screw motor yacht. Speed 15 to 16 miles. Built by Lawley. Deck dining room and smoking room. Three double staterooms. Hot water heated. Price attractive. Gielow & Orr, 52 Broadway, New York City.



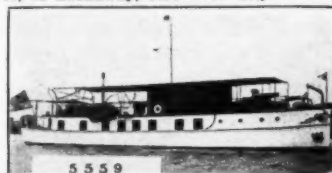
No. 5006—For Charter—Desirable twin screw 100 foot cruising houseboat. Speed 12 miles. Deck, dining room and lounging room. Seven staterooms, three bathrooms. Now in commission. Gielow & Orr, 52 Broadway, New York City.



No. 5403—For Charter—Desirable 51 foot houseboat. Standard motor. Large deck space. Two double and two single staterooms. Electric lights. Accommodations for seven persons. Gielow & Orr, 52 Broadway, New York City.



No. 2958—For Sale—Twin screw 120 foot steam yacht. Speed up to 24 miles. Deck dining room. Built by Seabury. Suitable for ferry or racing yacht tender. Gielow & Orr, 52 Broadway, New York City.



No. 5559—For Sale or Charter—Attractive 75 foot cruising houseboat. Standard engines. Deck lounging room. Three double and one single staterooms. Bathroom. Now in Florida. Gielow & Orr, 52 Broadway, New York City.



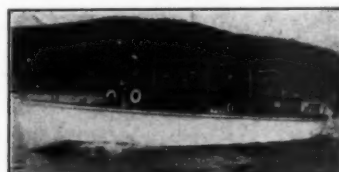
No. 2680—For Sale—Attractive 75 foot power yacht. Practically in commission. Two staterooms with double beds. Bathroom. Standard engine. Speed 12 miles. Able sea boat. Inspectable New York. Gielow & Orr, 52 Broadway, New York City.



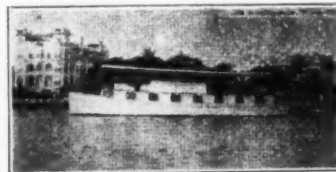
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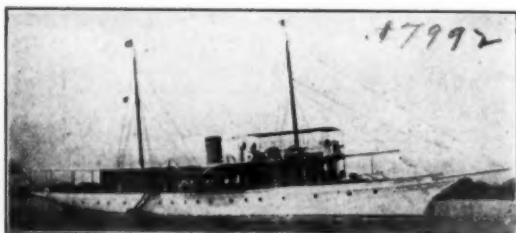
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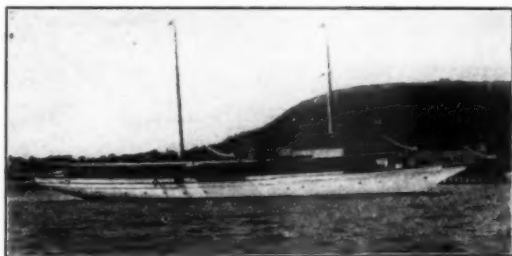
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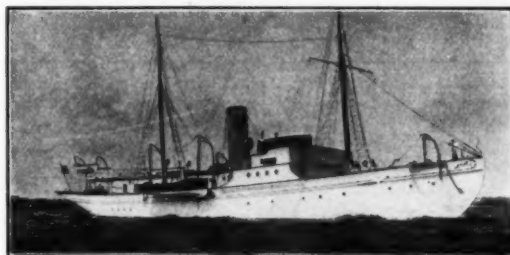
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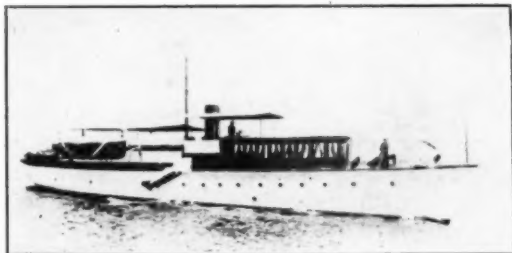
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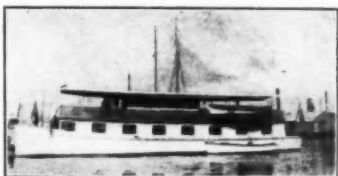
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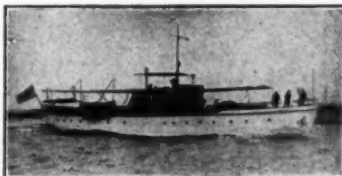
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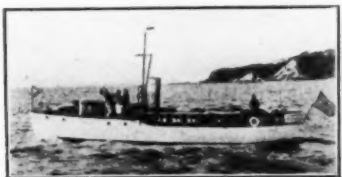
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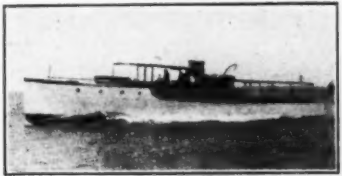
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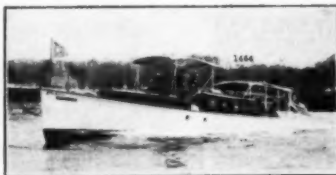
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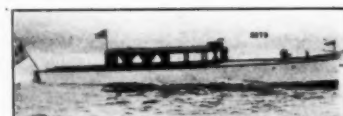
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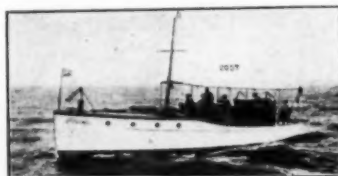
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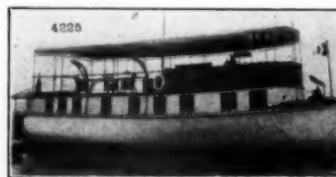
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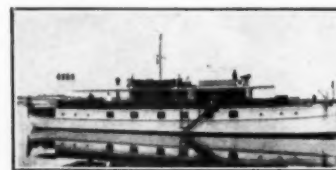
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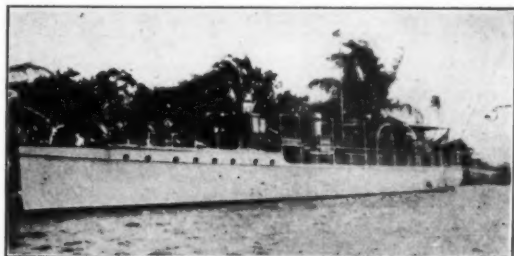
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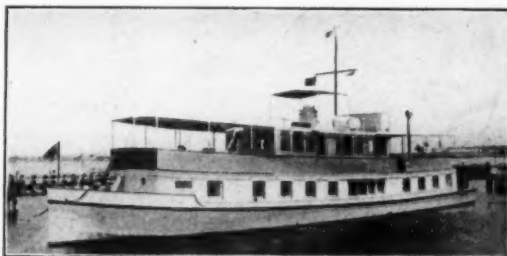
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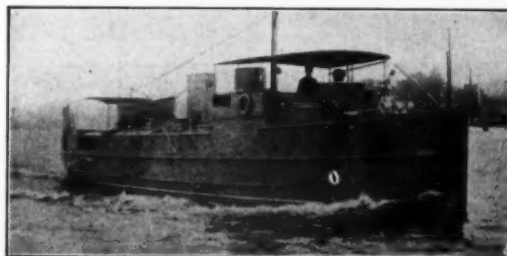
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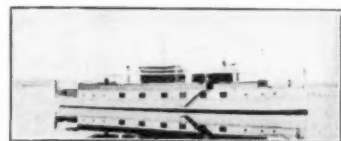
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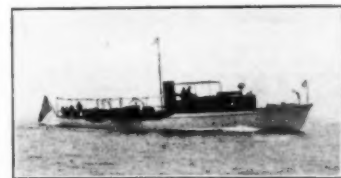
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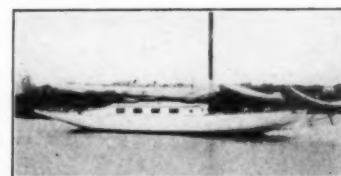
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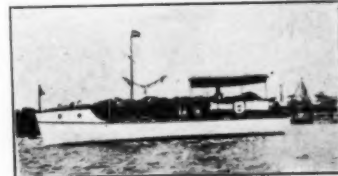
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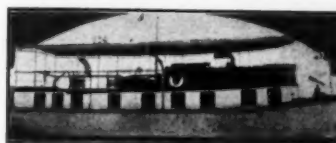
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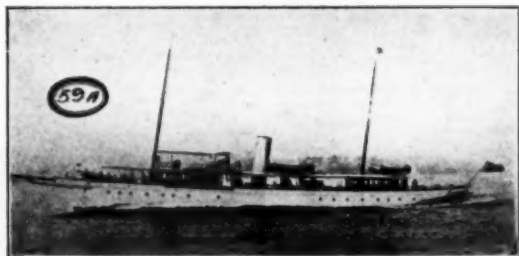
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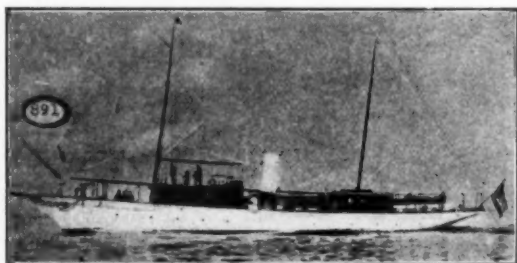
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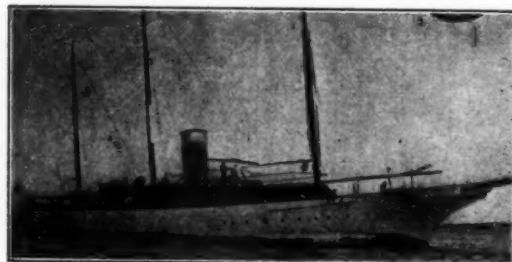
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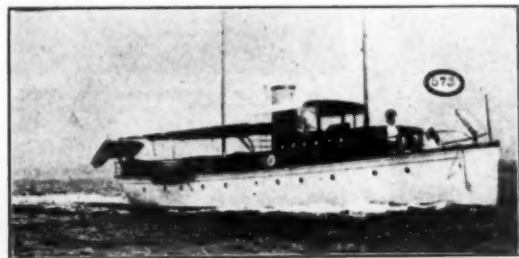
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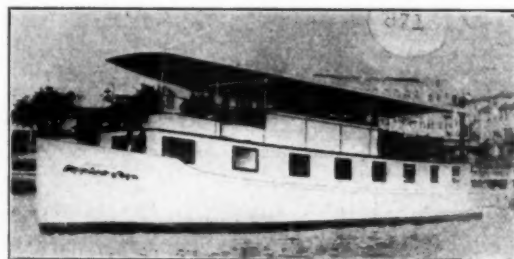
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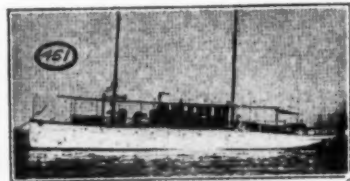
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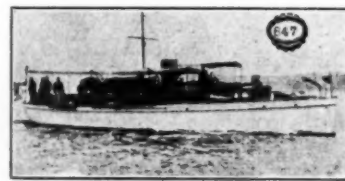
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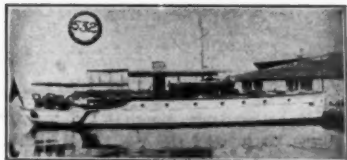
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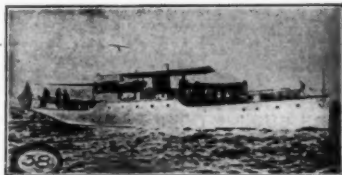
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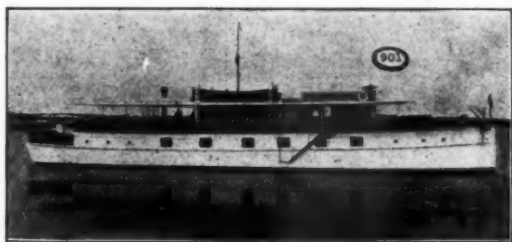
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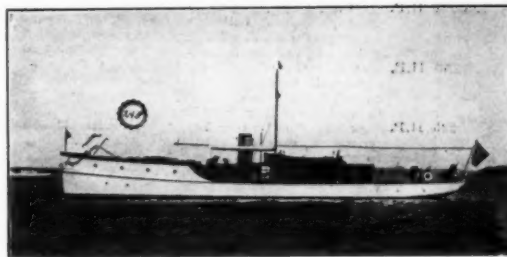
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QUOTATIONS ON OUR REBUILT MOTORS ARE SUBJECT TO PRIOR SALE. WE THEREFORE REQUEST THAT YOU WIRE US TO HOLD FOR YOU THE MOTOR WHICH YOU SELECT, FOLLOWING WITH DEPOSIT BY FIRST MAIL. THERE WILL BE A NOMINAL CHARGE MADE FOR CRATING, ACCORDING TO THE SIZE OF THE ENGINE.

Description	Price	Description	Price
Two 1400 H.P. Indicated, 1100 brake H.P. "Werkspoor" full diesel engines, single acting, six cylinder, four cycle, each complete with copper piping, auxiliaries, air compressors, air bottles, etc.; further information on request.....	\$200000	80 H.P. Mason Jager 6 cyl., 6 1/2 x 9, heavy duty, enclosed type G, Bosch magneto, coil, carburetor, spark plugs, electric starter, reverse gear, all complete back to and including coupling, used less than 10 hours.....	3400
Twin 320 H.P. Each brand new Bolinder semi diesel engines, ready for immediate shipment, price each.....	36000	75 H.P. Craig, 800 R.P.M., 4 cyl., 4 cycle, 1500 lbs., 8 1/2 x 7, complete with carburetor, coil, reverse gear, etc., complete up to and including coupling.....	1200
Twin 320 H.P. Each brand new semi diesel Avance engines, each.....	36000	70 H.P. Mason Enclosed type D, 4 cyl., 4 cycle, 5 1/2 x 6, without reverse gear but with electric self starter, Bosch magneto, etc., complete up to coupling, 1000 to 1500 R.P.M. (If desired reverse gear will be attached at extra cost), brand new.....	850
225-250 H.P. Sterling, 8 cyl., 4 cycle, high speed type, used very little and fully guaranteed, with carburetor, Bosch 2-point ignition, reverse gear, valve in head, etc., with one year guarantee.....	2000	70 H.P. Mason Enclosed type D, 4 cyl., 4 cycle, 5 1/2 x 8, complete with reverse gear, electric self starter, carburetor, Bosch magneto, etc., complete up to and including coupling, 1000 to 1500 R.P.M., 1140 lbs., brand new.....	1100
250 H.P. Van Blerck, 12 cyl., 4 cycle, 5 1/2 x 6, complete with two Bosch magnetos, two Schebler carburetors, reverse gear, etc., complete up to and including coupling.....	\$ 2500	70 H.P. Thelma, 6 cyl., 4 cycle, 5 1/2 x 8 1/2, with reverse gear, carburetor, coil, etc., complete up to and including coupling, also propeller, weight 1000 lbs., practically new.....	950
225 H.P. Jencick, 8 cylinder, 7 1/2 x 7 1/2, with Bosch magneto, reverse gear, coil, etc., complete to coupling, as is.....	1500	70 H.P. Sterling, six cylinder, heavy duty 6 1/2 x 9, with coil, magneto, carburetor, reverse gear, complete up to and including coupling.....	3400
225 H.P. Sterling, 8 cyl., 4 cycle, 5 1/2 x 6 1/2, double valve, bronze base, 2 carburetors, magneto, reverse gear, new, with one year guarantee.....	2500	60 H.P. Speedway, 6 cyl., 4 cycle, 6 x 6, with carburetor, coil, spark plugs, reverse gear.....	1200
One 200 H.P. Sterling engine, 8 cyl., 4 cycle 8 1/2 x 10, model D, heavy duty, with magnetos, coils, reverse gear, etc., brand new. Can be fitted to operate on kerosene.....	6500	60 H.P. Speedway, 6 cyl., 4 cycle, 6 x 6, with carburetor, magneto, coil reverse gear and propeller.....	1400
Twin 200 H.P. Each Van Blerck, 8 cyl., 5 1/2 x 6, complete with electric starting and charging outfit, magnetos, carburetors, etc., complete up to and including couplings, also propellers, practically brand new condition, each.....	2800	60 H.P. Lamb, 6 cyl., 4 cycle, 6 1/2 x 7, carburetor, coil, magneto, reverse gear, propeller.....	1800
For the pair.....	5200	60 H.P. Sterling, 6 cylinder, 6 1/2 x 8, with high tension Bosch dual magneto, carburetor, coil, reverse gear, complete back to and including coupling.....	2850
200 H.P. Van Blerck, 8 cyl., 4 cycle, 5 1/2 x 6, complete with two Bosch magnetos, carburetors, coils, reverse gear, etc., complete up to and including coupling.....	2500	60 H.P. Emerson, 6 cyl., 2 cycle, 5 x 5, with coil, carburetor, and coupling, as is.....	350
150-200 H.P. Mason enclosed type "D" 8 cyl., 4 cycle, 5 1/2 x 6, complete with reverse gear, carburetor, Bosch magneto, electric self starter, etc., complete up to and including coupling, 1000 to 1500 R.P.M., 1500 lbs., brand new.....	2500	50-65 H.P. Vorback, 4 cyl., 4 cycle, heavy duty, 8 x 10, complete with Schebler carburetor, Bosch magneto, coil, etc., complete to coupling; also 36" three blade propeller, 8' of 3" bronze shaft.....	1500
150-180 H.P. Sterling, 8 cyl., 5 1/2 x 6 1/2, Model "R", with Bosch magneto, two Schebler carburetors, reverse gear, etc., complete up to and including coupling.....	2000	50 H.P. Mason Jager, 4 cyl., brand new, type G, heavy duty, 6 1/2 x 9, enclosed type, Bosch magneto, coil, carburetor, spark plugs, electric starter, reverse gear, complete back to and including coupling.....	2500
110-140 H.P. Jager engine, 8 1/2 x 12, heavy duty, with coil, carburetor, spark plugs, Bosch magneto, reverse gear, complete back to and including coupling.....	4000	50 H.P. Craig, four cylinder, four cycle, heavy duty, with carburetor, coil, reverse gear, complete up to and including coupling.....	1800
180 H.P. Mason Enclosed type D, 8 cyl., 4 cycle, 5 1/2 x 6, power plant without reverse gear, but complete with electric self starter. Bosch magneto, carburetor, etc., complete up to and including coupling (if desired reverse gear will be attached on angle iron frame at extra cost), 1000 to 1500 R.P.M., brand new.....	1350	50 H.P. Hitchcock, four cylinder, four cycle, with carburetor, coil, reverse gear.....	1200
110-148 H.P. Van Blerck, six cylinder, 1918 Model M, four cycle, complete with electric starter, reverse gear, carburetor, etc., complete up to and including coupling.....	2400	50 H.P. Speedway, 4 cyl., 4 cycle, 6 x 6, with carburetor, coil, spark plugs and reverse gear.....	950
100 H.P. Sterling, 8 cyl., 4 cycle, 5 1/2 x 6 carburetor, coil, Bosch high tension magneto, reverse gear, oiler, propeller.....	825	50 H.P. Automatic, 4 cyl., 4 cycle, 7 1/2 x 9, with carburetor, coil, magneto, reverse gear and propeller.....	1200
Twin 100 H.P. Each Twentieth Century heavy duty, 8 cyl., 4 cycle, 8 x 10, complete with Bosch magnetos, coils, carburetors, reverse gears, etc., complete up to and including couplings, each.....	3000	50 H.P. Relaco, four cylinder, 7 1/2 x 9, with coil, carburetor, complete ignition outfit and propeller; this motor used only three seasons in a pleasure boat and in splendid condition.....	1850
For the pair.....	5750	50 H.P. Globe, 4 cyl., 4 cycle, 7 1/2 x 10, complete with carburetor, coil and reverse gear.....	1800
100 H.P. Hall Seeley, 1915 Model, 6 cyl., 4 cycle, 6 1/2 x 12, complete with Bosch magneto, coil, carburetor, reverse gear, etc., complete up to and including coupling, also propeller. This outfit has had less than six months actual running and is in splendid condition.....	2600	50 H.P. Anderson, 4 cyl., 4 cycle, 7 x 8, with carburetor, coil, reverse gear, etc., complete up to and including coupling.....	1350
90-100 H.P. Standard, 6 cyl., 4 cycle, 8 x 10, ready for immediate shipment, with mechanical oiler, magneto, coil, carburetor, air pump, reverse gear, etc., complete up to and including coupling.....	3000	48 H.P. Barber, 6 1/2 x 6 1/2, complete with coil, carburetor, Bosch magneto, coupling, spark plugs as is.....	250
90 H.P. Sterling, Model "R", 1500 R.P.M., 4 cyl., 4 cycle, complete with Bosch magneto, carburetor, coil, reverse gear, etc., complete up to and including coupling.....	1250	45-48 H.P. Sterling, six cylinder, four cycle, 5 1/2 x 6, with Schebler carburetor, Bosch magneto, oiling system, reverse gear, etc., complete up to and including coupling.....	1500
85-125 H.P. Model F. M. Sterling, aluminum base, and complete with electric starter, carburetor, magneto, reverse gear, etc., complete up to and including coupling, one year guarantee same as goes with new sterling.....	2500	45 H.P. Sterling, heavy duty, 6 1/2 x 9, complete with Bosch magneto, carburetor, coil, reverse gear, etc., complete up to and including coupling, same one year guarantee as with a new Sterling.....	2200
		45 H.P. Doman, 6 cyl., 4 cycle, 6 x 6, with carburetor, Bosch dual magneto, coil, spark plugs, Paragon reverse gear, mechanical oiler, complete up to and including coupling, used only sixty hours.....	1450

Description	Price	Description	Price
45 H.P. Holmes, four cylinder, four cycle, 6 x 8 1/4, with carburetor, coil, Bosch dual magneto, and reverse gear.....	900	15 H.P. Ferro, 2 cyl., 2 cycle, 5 x 5 with Atwater Kent ignition, carburetor, coil, reverse gear, etc., complete up to and including coupling.....	185
40-50 H.P. Hall, 6 cyl., 4 cycle, 5 1/2 x 6 1/4, carburetor, Bosch magneto, coil, reverse gear, propeller outfit.....	1400	14 H.P. Mohawk, 2 cyl., 2 cycle, carburetor, muffler, coupling.....	110
40-50 H.P. Speedway, 4 cylinder, 4 cycle, 6 1/2 x 8, Model C, heavy duty, complete with mechanical oiler, Schebler carburetor, Bosch magneto, reverse gear, etc., complete up to and including coupling.....	1600	14 H.P. Helmer four cylinder, four cycle, with carburetor, coil, reverse gear, etc., complete up to and including coupling.....	375
40-50 H.P. Anderson, 6 cyl., 4 cycle, 5 x 8, complete with carburetor, coil, spark plugs, magneto, rear starter, reverse gear, etc., complete up to and including coupling.....	1250	14 H.P. Cushman 2 cyl., 2 cycle with carburetor (as is).....	60
40 H.P. Sterling, heavy duty, 4 cyl., 4 cycle, 6 1/2 x 8, complete with carburetor, coil, reverse gear, air pump, bilge pump, Bosch magneto, etc., complete up to and including coupling, also 32 in. propeller, with one year guarantee.....	2000	12-16 H.P. Reliable, 4 cylinder, 4 cycle, with Schebler carburetor, coil, Baldridge enclosed reverse gear, etc., complete up to and including coupling.....	250
37 1/2 H.P. Anderson, 3 cyl., 4 cycle, 7 x 8, heavy duty, with carburetor, coil, reverse gear, etc., complete up to and including coupling.....	850	12 H.P. Lathrop, single cylinder, 2 cycle, with carburetor, reverse gear, etc., to coupling.....	150
32-37 H.P. Standards, 4 cyl., 4 cycle, 6 x 8, carburetors, coils, magnetos, reverse gears.....	1600	12 H.P. Eagle, Model 2-0, 1918, complete with carburetor, coil, Paragon reverse gear.....	190
28 H.P. Lackawanna, four cylinder, two cycle, carburetor, coil, coupling, spark plugs.....	175	12 H.P. Leighton, 4 cyl., 2 cycle, 4 x 4, make and break ignition, coil, oiling system, etc., complete up to and including coupling.....	100
27-35 H.P. Built by General Electric Co., 4 cyl., 4 cycle, Atwater Kent Ignition, Schebler carburetor, bronze upper base, aluminum lower base, 20 x 26, three blade propeller.....	400	12 H.P. Lamb, carburetor, coil and reverse gear.....	325
25-40 H.P. Mason Enclosed type "B," 4 cyl., 4 cycle, 4 1/2 x 6, Bosch magneto, carburetor, etc., complete up to and including coupling, brand new.....	850	12 H.P. Twentieth Century, 5 1/4 x 7 1/4, 2 cyl., 4 cycle, heavy duty, carburetor, coil, magneto, reverse gear.....	450
25-30 H.P. Wisconsin, Type "T," 4 cyl., 4 cycle, 4 x 6, practically new, without reverse gear but with governor, carburetor and magneto. (If desired reverse gear will be attached on angle frame at extra cost).....	450	12 H.P. Hall, 2 cyl., 4 cycle, carburetor, coil, one-way clutch, 5 x 7.....	325
25-30 H.P. Speedway, 4 cylinder, 4 cycle, carburetor, coil, Bosch magneto, spark plugs, reverse gear, splendid condition.....	550	12 H.P. Kermath, four cylinder, four cycle with carburetor, coil magneto, and reverse gear.....	325
25 H.P. Tuttle, 2 cyl., carburetor, coil, spark plugs propeller.....	225	12 H.P. Ferro, three cylinder, two cycle, with Atwater-Kent ignition, coil and reverse gear.....	145
22 H.P. Bridgeport, 2 cyl., 2 cycle, 5 1/4 x 5 1/4, Model "S-2," with carburetor, coil, Paragon reverse gear, and propeller.....	325	10-14 H.P. Friable, 2 cyl., 4 cycle, 6 x 8, with mechanical oiler, carburetor, coil, Paragon reverse gear, etc., complete up to and including coupling.....	450
21 H.P. Campbell, 3 cyl., 4 cycle, 5 1/2 x 6 1/2, carburetor, Atwater Kent ignition, reverse gear.....	650	10-12 H.P. Vim, 2 cylinder, 2 cycle, carburetor, coil, spark plugs, reverse gear.....	110
21 H.P. Clifton, 3 cyl., 4 cycle, 6 1/2 x 7, carburetor, magneto, coil, reverse gear.....	750	10-12 H.P. Harris, 2 cylinder, 4 cycle, 4 1/2 x 6, with carburetor, Atwater-Kent ignition and propeller.....	350
20 H.P. Fox, 2 cyl., 2 cycle, carburetor and oiler.....	150	10-12 H.P. Palmer, 2 cyl., complete with carburetor, coil reverse gear, etc., complete up to coupling.....	145
20 H.P. Mason Type "L," 2 cyl., 4 cycle, 6 1/2 x 8, with reverse gear, carburetor, ignition outfit, Bosch magneto, jump spark, 450 R.P.M., complete up to and including coupling, each.....	750	10 H.P. Hartford, 2 cylinder, 2 cycle, with carburetor, coil, reverse gear.....	165
20 H.P. Sparks, 4 cylinder, 4 cycle, 4 1/2 x 5, reverse gear, carburetor, coil, etc., complete up to and including coupling, also propeller.....	475	10 H.P. Tuttle, 2 cyl., 2 cycle, carburetor, Perflex ignition and coupling.....	110
20 H.P. Reynolds, 4 cylinder, 4 cycle with carburetor, coil, reverse gear, etc., complete up to and including coupling.....	275	10 H.P. Globe, 2 cyl., 4 cycle, 6 x 7, unit plant with reverse gear, carburetor, coil, propeller.....	475
20 H.P. Sterling, two cylinder, 6 1/2 x 8, Bosch magneto, coil, carburetor, spark plugs, reverse gear.....	1000	10 H.P. Hartford, 2 cylinder, 2 cycle M. & B. coil carburetor, reverse gear, etc., to coupling.....	195
20 H.P. R. C. H. automobile engine with carburetor and coil, only, not overhauled, to be sold, "as is." Running in a boat until day it was taken out and replaced with a larger motor.....	75	10-12 H.P. Racine, 2 cyl., 2 cycle, with carburetor, as is.....	40
20 H.P. Boston, 2 cyl., 4 cycle (as is).....	50	10 H.P. Otto, 2 cylinder, 4 cycle, carburetor, coil, reverse gear.....	250
18-25 H.P. Sterling, four cylinder, four cycle, 4 1/2 x 5 1/2, complete with carburetor, coil, magneto, reverse gear, rear starter, etc., complete up to and including coupling, one year guarantee.....	775	10 H.P. Springfield, 2 cyl., 2 cycle, 4 1/2 x 4 1/2, with carburetor, coil, Paragon reverse gear and propeller.....	150
18-24 H.P. Standard, 3 cyl., 4 cycle, 6 x 8, heavy duty, with carburetor, coil, reverse gear and propeller.....	1050	10 H.P. Roberts, 2 cyl., 2 cycle, with carburetor, coil, spark plugs, rear starter, Baldridge reverse gear.....	145
18 H.P. Eagle, 3 cylinder, 2 cycle, three carburetors, coupling, coil, new Paragon reverse gear.....	290	10 H.P. Mianus, with two Schebler carburetors, magneto, coil, etc., complete up to and including coupling.....	165
18 H.P. Roberts, three cylinder, two cycle, jump spark, with carburetor, coil and coupling.....	150	10 H.P. Mianus, 2 cyl., 2 cycle, with carburetor, coil, and reverse gear.....	185
Twin 16-20 H.P. Peerless, 4 cyl., 4 cycle, 4 x 6, with carburetor, coil, magneto, and reverse gear. One engine has electric starter.....	500	9 H.P. Lackawanna, two cylinder, two cycle, carburetor, coil, spark plugs, as is.....	50
Engine without starter.....	400	8-10 H.P. Palmer, type P-2, with carburetor, coil, spark plugs and reverse gear.....	125
For the pair.....	800	8-10 H.P. Sterling, 2 cylinder, 4 cycle, 4 1/2 x 6, complete with mechanical oiling system, carburetor, reverse gear, etc., complete up to and including coupling, one year guarantee.....	475
16-25 H.P. Hubbard, 4 cyl., 4 cycle, 4 1/2 x 5 1/2, complete with reverse gear, carburetor, oiler etc., complete up to and including coupling.....	550	8-10 H.P. Barber, two cylinder, two cycle, carburetor, coil, spark plugs, coupling, propeller.....	100
16 H.P. Globe, 2 cyl., 4 cycle, 7 x 9, with coil, carburetor, reverse gear.....	475	8 H.P. Rochester, 2 cyl., 2 cycle, with carburetor, coil, spark plug and reverse gear.....	135
16 H.P. Kermath (1918) Unit "B" power plant with magneto, reverse gear, carburetor, etc., complete up to and including coupling, practically new.....	400	7 1/2 H.P. Mianus, single cyl., 2 cycle, complete with grease cups, ignitor, carburetor, etc., complete up to and including coupling.....	100
15-18 H.P. Lackawanna, 2 cyl., 2 cycle, carburetor, coil, muffler, One-Way Clutch, all in excellent condition.....	160	7 1/2 H.P. Losier, with carburetor, coil and coupling, as is.....	55
15-18 H.P. Capitol, 3 cyl., 2 cycle, carburetor, coil reverse gear.....	125	7 H.P. Fairfield, carburetor, coil muffler and coupling, as is.....	75
15 H.P. Fulton, 2 cylinder, 2 cycle, carburetor, coil, coupling, spark plugs, oil and grease cups, muffler and propeller.....	185	7 H.P. Hubbard, two cylinder, two cycle, with carburetor, coil and coupling.....	145
15 H.P. Cushman, two cylinder, two cycle, with carburetor, coil and coupling.....	150	7 H.P. I. X. L., 6 x 7, one cylinder, two cycle.....	40
		6 H.P. Gile, two cylinder, two cycle, jump spark, with carburetor, coil and spark plugs.....	95
		5 H.P. Truscott, one cylinder, two cycle, jump spark, with coil, carburetor and coupling, as is.....	40
		5 H.P. Fairbanks-Victor, with carburetor, coil and coupling.....	75
		5 H.P. Dutton, single cyl., 2 cycle, carburetor, muffler, coupling.....	55
		5 H.P. Hubbard, single cyl., 2 cycle, with carburetor, coil, propeller, muffler.....	95
		5 H.P. Losier, single cylinder, 2 cycle with carburetor, coil, and coupling, as is.....	35
		5 H.P. Little Giant, single cylinder, 2 cycle, with carburetor, coil and spark plugs.....	55
		5 H.P. Howard, one cylinder, 2 cycle, carburetor, coil, spark plugs and coupling, as is.....	80
		5 H.P. Royal, carburetor, coil, coupling.....	60
		4 H.P. Hall, 1 cyl., 4 cycle, with carburetor and coil.....	115

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THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 3 cents per word, minimum 75 cents. If an illustration is used, the charge is as follows, which includes the making of the cut:

Cut one inch deep, one column wide.	... \$3
Cut 1 1/4 inches deep, 1 1/4 columns wide.	... \$5
Cut 2 1/4 inches deep, three columns wide.	... \$15

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offer of the month. Please mention MoToR Boating.



Genuine Cape Cod Cabin Cat Boats—"KING-FISHER" 28 footer, 12 foot beam, centerboard, self-bailing cockpit, steers wheel, roomy, natural interior, fast sailing. Bargain \$600. "PRISCILLA"—26 footer, 11 foot beam, sleeps 4, natural finished, self-bailing cockpit, interior, room install engines. \$600 cash. Inspection Whites Yard, Grantville College Point, L. I. Owner E. V. Rosemond, Forley St., Elmhurst, N. Y.



"CROSBY"—23 foot 7 Mianus, Auxiliary, centerboard cat, water closet, water, gasoline and kerosene tanks. Tight, husky, good outfit. \$650. E. V. Rosemond, Forley Street, Elmhurst, N. Y.

For Sale—Runabout of the V-bottom type, 32 foot long, 6 foot beam, double planked below the chime and mahogany finished. Speed 32 miles an hour. Seating capacity nine people. Hull is equipped with latest Model "M" Van Blerck six cylinder 150 h. p. Motor, and car-

ries full equipment as required by the U. S. Regulations. It is equipped with electric lights, comfortable cane arm chairs and cushions, anchor, life preservers and Pyrene fire extinguisher. Price \$4,000 complete f. o. b., Monroe, Mich. Photos on request. Van Blerck Motor Company.

For Sale—63 foot glass cabin, Florida cruiser, Standard engine, electric lights. Apply R. E. Barry, owner, or J. E. Anderson, agent. Tebo Basin, 23rd St., Brooklyn, N. Y.

For Sale—40 foot W. L. Composit sea going auxiliary ketch, in commission. Apply R. E. Barry, owner, or J. E. Anderson, agent. Tebo Basin, 23rd St., Brooklyn, N. Y.

For Sale—Four cylinder 6 by 8, two cycle, Heavy Duty Marine Motor in first-class condition. Zints manufacturer, \$150.00 F. O. B., Washington, D. C., Percy M. Child, 1110 14th St., N. W.

Wanted—First class runabout with some speed and good motor, and one cabin boat in exchange for virgin lands fronting on Georgian Bay and half mile from the Canadian Pacific Railway. Address F. A. Dunsmoor, 100 Andrus Bldg., Minneapolis, Minn.

Wanted—A Cruiser or Cruising House Boat. Forty or forty-five feet long. Not less than 10 foot beam and not over 3 foot 6 inch draft. Must be in good condition and a bargain for cash. Address E. M. L., 1111 North 63rd St., Philadelphia, Pa.

For Sale—Raised deck, 40 ft., tunnel stern cruiser, specially adapted for cruising in Florida's shallow waters. Been in service on Indian River two seasons. Sleeps eight. Mahogany woodwork throughout. Saude hardware fittings. Van Blerck 5 h. p. power plant, starting and lighting system. Perfectly equipped. Inquiries invited. Must sell. Address Mrs. Mary E. Goodwin, Naperville, Ill.

For Sale—Forty foot Bridge Deck Cruiser, with pilot house, new 1916 completely equipped, sleeps six, excellent for Florida. Price \$3,500. Apply C. Grecht, 1330 S. Sharp St., Baltimore, Md.

For Sale—2-20-35 h. p. Sterling, equipped with North East starters, used engine. 1 30 h. p. Hershell Spillman used engine. 1 16 h. p. Dunn Motor, new. Wanted—Fay & Bowen 30 foot Hull, must be in good condition. Grisdale & Baugh, Lake Placid, New York.

Wanted—Speedway runabout between thirty and thirty-five feet. State price, full particulars and where boat can be seen. Henry Kell, 401 East 163rd St., New York City.

For Sale or Exchange—One 6 cylinder, 2 cycle, Pierce Budd Racing Engine, 60-70 h. p. Excellent running condition. Equipped with water jacketed manifolds. Bash high tension magneto and rear starter. Will exchange for a 4 or 6 cylinder, 4 cycle, medium duty Marine Engine complete. Frank Kohrs, care of Kohrs Packing Co., Davenport, Iowa.

Wanted—Yacht for use in Antilles. Approximate data: Length 65 ft. Draft 6 1/2. Auxiliary sail. 2 state rooms. Comfort first. Large storage capacity necessary. Base price five thousand dollars, if electric plant is sufficient for 1/2 h. p. motor, etc. Search light, 7 fans; this would be considered as an added consideration such as extra equipment. Address Warren Alden Lord, 1624 Milan St., New Orleans, La.

Wanted—Wherever there are boats, representatives to handle our speed indicators, taffrail logs, and marine meters selling from \$8 to \$65. Can you consider a good proposition? Write for details. Irvin W. Masters, Muncie, Ind., U. S. A.

Heavy Duty 12-15 h. p., two cylinder Model C Sterling motor, complete with Reverse Gear, Bosch magneto and propeller. One of the good old reliable fool-proof motors, \$375.00. John G. Robinson, 484 Bewick Ave., Detroit, Mich.

SALE BY THE NAVY of MOTORBOATS, YACHTS, TUG, FISH and FREIGHT BOATS

There will be sold by sealed proposals, receivable at the bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12:00 o'clock noon, December 1, 1919:—

Freight Boat, EUGENE F. PRICE S. P. 839, now in the First Naval District, Navy Yard, Boston, Mass.

Motor Yacht, PARTHENIA S. P. 671, now in the Third Naval District, Fleet Supply Base, Brooklyn, N. Y.

Steam Yacht, VEGA S. P. 734—Tug, FEARLESS S. P. 724—Freight Boat VESTER S. P. 686—Fish Boat, SUSSEX S. P. 685. These vessels are now in the Fourth Naval District, Navy Yard, Philadelphia, Pa.

Motor Boat, NERITA S. P. 3028, now in the Fifth Naval District, Naval Operating Base, Hampton Roads, Va.

Motor Patrol, JEANETTE S. P. 149, now in the Sixth Naval District, Charleston, S. C.

Motor Yacht, JESSAMINE S. P. 438, now in the Ninth Naval District, Naval Training Station, Great Lakes, Ill.

Motor Boat, RAINIER, now in the Twelfth District, San Francisco, Cal.

Exact location may be ascertained from the Commandant of the district concerned, and should be obtained before making trip for inspection. Sales will be for cash to the highest bidders. Ten per cent deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale, obtainable from the bureau of Supplies and Accounts, or Commandants of the above districts. JOSEPHUS DANIELS, Secretary of the Navy. 10-21-19.

For Sale—Raised Deck Cruiser, 46 by 11. Fully equipped, bath tub and hot water. Handsomely furnished. 45 h. p. Sterling one-man control. Ideal for Florida. Now in commission. Price \$6,000. J. H. Egan, 236 S. 9th St., Philadelphia, Pa.

For Sale—A 35 foot Hacker built runabout having speed of 30 m. p. h. This boat built in the high grade manner peculiar to Hacker boats when built in the Hacker factory.

Here is a great opportunity for a person going south this winter as the boat is in good running order at this moment, and you may have immediate possession.

The owner desires to sell only because he has ordered a 40 mile boat to be built by us and does not care to have two boats next season.

For a picture and specifications, if you mean business, write to The Hacker Boat Co., Detroit, Mich. Attention Lieut. Palmer, Gen. Mgr.

Salesman Wanted—We want a few high grade men to sell the Jones Tachometer to the motor boat industry. Will grant exclusive territory and liberal commission. Prefer connecting with men who regularly call upon boat builders and owners, who could handle profitably side line advantageously. Jones-Motrols, Inc., 29 W. 35th St., New York City.

One 4 cylinder 4 cycle 4 1/2x5 Brennan Engine practically new unit power plant with reverse gear, rear starter built in, Bosch magneto, overhauled, refinished, in perfect condition. \$350.00—splendid bargain. Kermath Mfg. Co., Detroit, Mich.

Wanted—Position as Captain or Engineer on yacht going to or in Florida. Have piloted yachts from New York to Miami and from Chicago via Mississippi to Miami. Familiar with all Florida waters. I have A. B. papers and can furnish references. Wm. Keough, 533 Belmont Ave., Chicago, Ill.

ATTENTION, SPORTSMAN.

A deep sea pleasure yacht 104 tons, most approved equipment, to be sold at once. Price \$200,000. Cable address: F. Ludwig Wulff, in Neumuenster, Germany.

Advertising Index will be found on page 94

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Build a real boat that you will be proud of. Boats designed by Gardner need no other recommendation. Complete plans and full size patterns furnished. Fast V-bottom boats a specialty. Hydroplanes, Auxiliaries and Sea-going Cruisers. Fast 20 ft. runabout designed for Ford Auto Engine. Blue Prints on request.

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Yard and Shop

(Continued from page 40)

tion, Arthur J. Murray, president and G. J. Lacy, his assistant at Springfield, recently sailed for Europe to study conditions at first hand. They plan to stay for at least three months and visit England, France, Belgium, Italy and Switzerland, with a view to introducing Bosch products and studying the improvements that might have been made in the art abroad.

Distance Type Model A Boyce Moto-meter

The new device for the motor boat enthusiast is one which shows to the operator at a glance the temperature of

(Continued on page 64)

Wanted—A four cylinder four cycle modern marine motor, 5 1/2 bore with electric starter. Give manufacturer's number and model with complete description. For cash. Address Cash, care MoToR Boating, Box 27.

For Sale—117 foot steel ocean going steam yacht. Perfect condition, \$20,000. Apply Box 21, care MoToR Boating, 119 West 40th St., New York City.

Wanted, by man and wife, place together on yacht or houseboat. Man professional sailor, good boat handler. Wife experienced housekeeper and trained nurse. Good sailor. \$125 per month. Address "Robbs," care MoToR

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Sale by the Navy of Freight Lighter, Motorboats and Yachts

There will be sold by sealed proposals, receivable at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, December 1, 1911:

Motorboats, SHUR S. P. 782, NIGHT-INGALE S. P. 523, DAQUIRI S. P. 1285, ESTELLA S. P. 537, and yachts HALCYON II. S. P. 582, ACTUS S. P. 516, ADMIRAL II. S. P. 967, now in the First Naval District, Navy Yard, Boston, Mass.

Freight Lighter, SUCCESS S. P. 2912, motorboat, NAUSHON S. P. 517, and yachts, KWASIND S. P. 1233, MARGARET S. P. 527, now in the Third Naval District, Fleet Supply Base, Brooklyn, Mass.

Motorboats, SEA GULL S. P. 223 and MAGGIE S. P. 1202, now in the Fifth Naval District, Naval Operating Base, Hampton Roads, Va.

Motorboats, HETMAN S. P. 1150 and RUSS S. P. 1151, now in the Seventh Naval District, Naval Station, Key West, Fla.

Yacht, SISTER S. P. 822, now in the Eighth Naval District, New Orleans, La.

Motorboat, COYOTE S. P. 84, now in the Ninth Naval District, Naval Training Station, Great Lakes, Ill.

Exact location may be ascertained from the Commandant of the district concerned, and should be obtained before making trips for inspection. Sales will be for cash to the highest bidders. Ten per cent deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale obtainable from the Bureau of Supplies and Accounts, or Commandants of the above districts. JOSEPHUS DANIELS, Secretary of the Navy. 10-18-19.

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Send for bargain list, prices are right.

Sale by the Navy of Mine Sweeper, Motorboat, Yacht, Barge and Fishboat

There will be sold by sealed proposals, receivable at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12:00 o'clock noon, November 24, 1911:

Mine Sweeper, LONG ISLAND, S. P. 672; Motorboats, SEA OTTER, S. P. 781; MAGNET, S. P. 563, and PATROL No. 6, S. P. 54; Coal Barge, BESSIE J., S. P. 1919; Yacht, PAWNEE, S. P. 699. These vessels are now in the First Naval District, Navy Yard, Boston, Mass.

Menhaden Fishboat, ALBERT BROWN, S. P. 1050, now in the Fourth Naval District, Navy Yard, Philadelphia, Pa.

Motorboat, ME TOO, S. P. 155, now in the Sixth Naval District, Charleston, S. C. Extract location may be ascertained from the Commandant of the district concerned, and should be obtained before making trips for inspection. Sales will be for cash to the highest bidders. Ten per cent deposit required with bid. Right to reject all bids reserved. Forms of proposal, information concerning the vessels, and the terms of sale obtainable from the Bureau of Supplies and Accounts, or Commandants of the above districts.

JOSEPHUS DANIELS,
Secretary of the Navy.
10-18-19

How Fast Can a Runabout Go?

(Continued from page 32)

is No. 2. The new Murray & Tregurtha 6 $\frac{1}{4}$ x7 $\frac{1}{2}$ six will also produce a 40 mile boat. The eight Sterling will produce a 40-mile boat. So here we have four good motors that will produce a boat to qualify which are available, without going into a special motor.

(Letter from A. J. Utz of the Sterling Engine Co., Buffalo, N. Y.)

Forty miles is awfully fast for a displacement boat. We do not know of any marine engine company today that you can turn to and be sure of getting a motor that would drive a runabout 32 feet or over, 40 real miles an hour. Twin screw plants are out of the question for runabout service. Enough trouble is encountered with one engine. These want to be runabouts that a man can use during the week for pleasure, and, if he chooses to carry his friends to the races, go out and race his boat, then go back and get his friends and carry them home.

We think many of the so-called 37 and 38 milers today if put over the American Power-Boat Association's official mile would just nicely tip the 35 mile mark and many of them would not do it. It looks to me as though a 35 mile minimum speed would be the thing. Then, in seasons to come, as the engines are improved and advanced, this might be increased.

I agree with you thoroughly on the stand you have taken for if the aeroplane engines are permitted to go into these events the marine fellow is apt to lose a good deal of interest and you are not promoting the advancement of design and construction of marine engines, which we understand is one of Mr. Fisher's prime motives in putting up this trophy.

There is an immense amount of interest in the Fisher Trophy Race and it is one of the best things that has been pulled off in a long time and should have the backing of everybody.

(From George F. Crouch.)

I have made a couple of rough estimates and come to the conclusion that it should be very easy indeed to design and build a substantial runabout equipped with some of the marine motors already built, having a total piston displacement of not over 3,000 cubic inches, which would be capable of speeds of better than 40 miles an hour.

I believe this could be done on a boat 35 feet long, 6 feet, 6 inches beam, perhaps 6 feet, 10 inches beam, with a total displacement of approximately 7500 pounds maximum. A boat of that size and weight could easily carry two 8-cylinder racing Sterlings or two of the new Murray & Tregurtha 6-cylinder models or two of the old 8-cylinder 6x6 high-speed Van Blerck motors.

It should be a very easy thing to get out a lighter boat, but with fully as substantial a hull, carrying two 6-cylinder Hall-Scott motors of 200 h.p. each. That boat could be approximately 1200 to 1600 pounds less displacement and yet have as substantial a hull as the first mentioned. Whether or not such a boat would make the circuit of the course at the rate of 40 miles an hour is another matter, but I am sure that it could show a speed of better than 40 miles an hour as the mean of four runs over the mile, two with and two against the tide.

(From H. W. Patterson of the Consolidated Shipbuilding Corp.)

It is my opinion that there is no marine engine on the market today capable of driving a 32 foot and up practical runabout, 40 real miles per hour. Neither do I think it possible. Such an engine and hull would be only fit for racing and altogether too light to be classed as a sensible boat.

People now demand more comfort and convenience than formerly, such as windshields, electric starting and lighting, etc., and if there was a light weight reliable engine of sufficient power, I am afraid such things which seem necessary, would make the weight and windage prohibitive for any such speed, and I doubt if many would be interested in a boat without them.

It seems to me that a good, sensible, round bilge boat, to go 40 miles, should be about 50 feet long, with 600 to 700 h.p. A V-bottom would of course do it easier.

This company abandoned the extreme light weight and high speed game some time ago, so that my experience and interest in recent years has been in speeds below 32 miles. Therefore my estimate given without going into the matter more, may be wide of the mark.

(From W. D. Beauvais, Designer of Great Lakes Boat Building Corp.)

I do not believe it will be possible to work out a boat powered with a standard marine engine to develop a turn of speed of 40 miles an hour. From the data I have in my files I am sure that this speed has not been obtained thus far.

It seems to me that the speed should be reduced to 35 miles an hour in order to make sure of obtaining a large number of entries. As I understand it, Mr. Fisher's idea is to encourage the development of a fast runabout which can be used not only for racing, but also for pleasure purposes. If this is true, then the speed limit should be brought down to 35 miles an hour, which will permit of the racing of many 32-foot runabouts powered with 8-cylinder Sterling or Van Blerck engines.

A question which was also discussed yesterday was the matter of what constitutes a standard marine engine. For instance, I am of the opinion that the Hall-Scott motor is purely a converted aviation engine with a marine base. If the Hall-Scott should be listed as a marine power plant then the next question to come up would be whether a Liberty engine could be fitted in a marine base and considered as qualifying as a permissible type of power plant. Of course, with engines of this character a speed of 40 miles an hour could be obtained, but I do not believe that is the idea Mr. Fisher had in mind in offering his trophy.

(From E. D. Purdy, President of Purdy Boat Co., Sibley, Mich.)

We believe that a good serviceable runabout can be built about 40 feet long with approximately 400 h.p., that will make 40 miles per hour and better.

There are several makes of motors which will handle this proposition and will come under the Deed of Gift requirements.

We are working up a design for this competition which we expect will give good results at all speeds.

(From Guy W. Vaughan, Vice-President of Van Blerck Motor Co., Monroe, Mich.)

I think that 40 m.p.h. for a 32-foot boat equipped with a standard marine motor as furnished today, is going to make the entry list exceedingly short. From my knowledge of runabouts, I have never seen any that would go over forty miles per hour, with the exception of the "N'Everthin'" equipped with a Hall-Scott motor which is in every sense a converted aviation motor, irrespective of any statements that company may make to the contrary. It is one-half of a Liberty motor with a special crankcase and a reverse gear. 36 m.p.h. is possible with a 28-foot runabout, equipped with a 6-cylinder Van Blerck or Sterling engine, and there are a number of boats that are capable of this speed.

The easiest way to kill enthusiasm is to put a speed minimum on the trophy that could be met by but few if any. I know that Great Lakes has laid out a runabout for the event but they cannot see their way clear to make it attain a speed of 40 miles. The Belle Isle Boat Company feels the same way.

I am trying to get several men interested in building boats for this trophy but with such specifications I fear that it will be impossible to interest them. I am very much in favor of reducing the minimum speed rather than increasing the length of the boat. There is no doubt in my mind that limiting the speed to 36 m.p.h. will make the event much more interesting and it will not affect the boats that are capable of 40 m.p.h. and will give the slower boats a chance in a race of sufficient length.

(Continued on page 80)

EGYPTIAN DEITIES

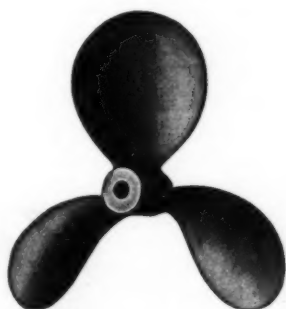
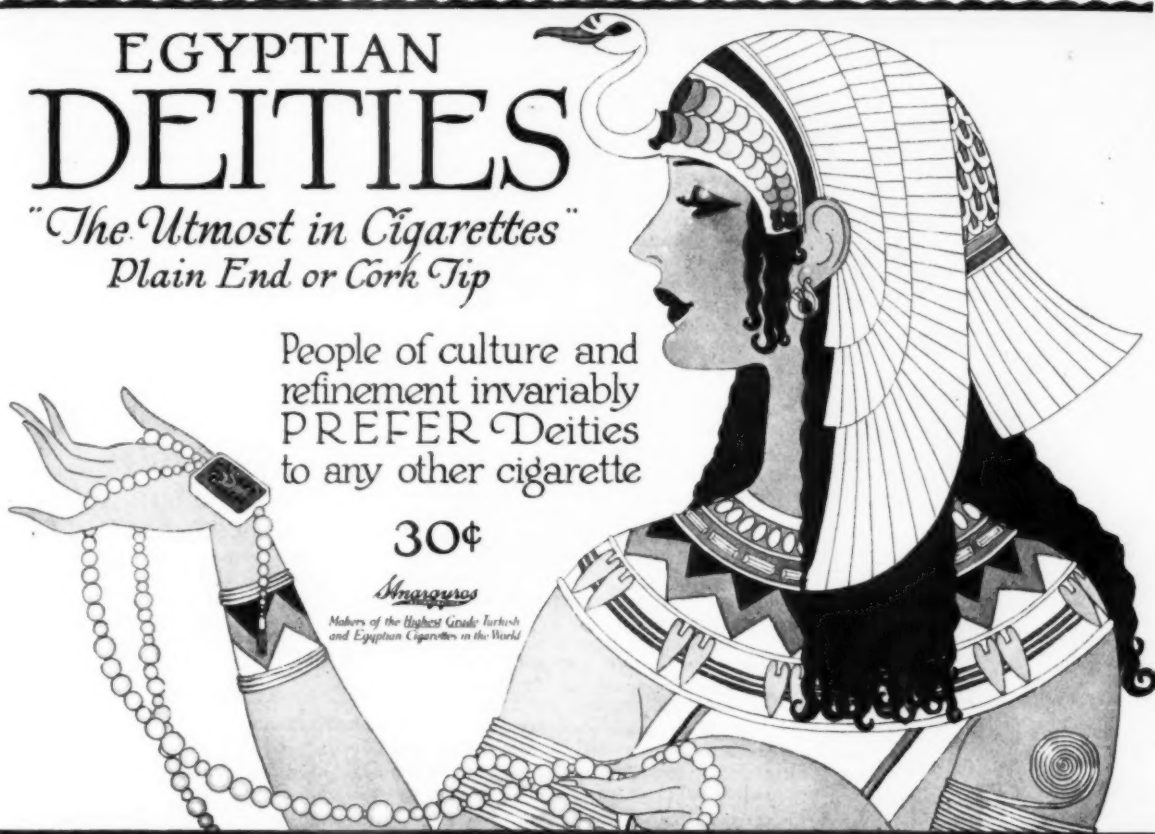
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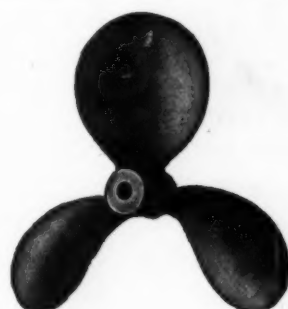
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Catalog and data sheet upon request.

HYDE WINDLASS COMPANY

BATH

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How the Chasers Got Their Gas

(Continued from page 14)

craft in position—not so close to the side of the ship that a wave could throw him on, and not so far from it that the scope of the tackle was exhausted and he had to do it under the eye of the detachment commander—the man who invented seamanship. I have never heard a chaser skipper express a passionate fondness for this particular phase of chaser experience.

With the provisions aboard (so rapid was the system that one hour sufficed to feed the fleet—and without the loss of a single yard of headway) the leading unit of three boats overtook the tanker and the others stood in readiness to take their turn at fuelling. Three chasers at a time were gassed from Chestnut Hill, one from each quarter and a third from astern, and as in the matter of provisioning, fuelling was done at standard speed. To the chasers having positions on the quarters, bow lines were passed to lead through the bull-nose and secure to the deck winch, and springs were led to the mount of the 3-inch gun on the forecastle deck. By this arrangement of lines it was possible to make a chaser ride two or three feet clear of the tanker's side, and in theory she could lie alongside indefinitely without coming to injury. But on the morning of our first fuelling the boat of our unit having the position on the port quarter was so badly battered by a sea rolling down from windward that subsequent units gassed from the stern (two abreast) and from the lee quarter only.

The stern position also offered its difficulties, but they were not insuperable. As it would be unwise for a chaser to go close enough under the stern of a tossing ship to take a heaving line, the Chestnut Hill towed a float in her wake at a distance of fifty yards, and it was our part of the performance to secure ourselves by grappling for this buoy and then making the hawser to which it was attached fast to our towing bridle. This done, by the combined efforts of fifteen men battling against the pressure on the bight of the towing line in the water, we cut off one of our engines and stood by to pick up the buoy which was next floated down with the gasoline hose attached. The hose was frapped to a three-inch line and was so relieved of most of the strain, but the incidental stress of having a portion of its length dragged through the water at an 8-knot clip was enough to part the couplings more than once.

Had it been possible to foretell the weather with any degree of certainty, each chaser could have cruised for five days or more without replenishing her gasoline supply, thus making but one fuelling for the trip. But in August the temper of the Atlantic in the Thirties is not to be trifled with, and we maintained an ample reserve of gas by

(Continued on page 58)



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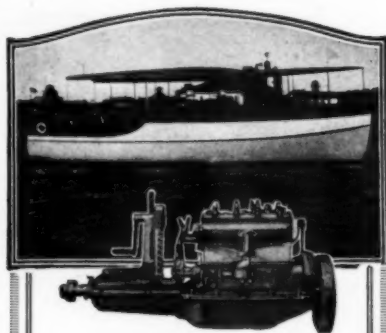
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Sandusky Boat & Cabinet Works, Sandusky, Ohio

If you want a new boat for next summer read the announcement on page 57.

How the Chasers Got Their Gas

(Continued from page 56)

twice refilling our tanks. The second fuelling occurred on the seventh day out, and as the calm of the first two days had been succeeded by a ground swell and chop from the southwest, we had an unpleasant time of it, parting the hose twice and trailing astern of the Chestnut Hill for upwards of two hours. While we were so engaged, with our radio switches thrown to reduce the fire risk, the Chestnut Hill repeated by semaphore a telephone message from the Leonidas to the effect that chasers might draw chicken that afternoon with their other provisions. Chicken in midocean had an enticing sound, but I have been rendered suspicious by sea service with my fellow man and I said to myself, "If this chicken were good the paymaster would feed it to the crew of the Leo; if I had chicken that had ceased to be good I would expend it to someone else." So the 131 went without its chicken dinner. So, for that matter, did the chasers that were guileless enough to requisition it—thereby verifying my suspicions.

These days of fuelling and provisioning were the only highlights of the cruise from island to island. For the rest we stood our watches, ate our canned bill, and slept when off duty. There was never the sense that we were doing anything unusual, although at night on passing a strange ship there would be speculation as to what the other fellow might think of so many running lights so close to the water and so subject to the tossing of the waves. On the 131 we stood one watch in three without dogging, arranging to give the officers the morning and afternoon watches so that we might navigate without an extra tour of duty on deck. The chief boatswain's mate always took the middle watch at night, and if he had no particular love for the "graveyard" he was too good a sailor to say so. Of amusement there was none, except for desultory reading, with one's feet and back braced against the rolling of the boat, or for talking with the semaphore flags to other chasers.

So, taking the days and the weather as they came, we pushed on to Bermuda and on the afternoon of August 8 came to anchor in Grassy Bay, ten days and thirteen hours out from the Azores. A week later six of us raced to New York and established a new record for the course—but that is a story which has already been told. Only one paragraph of facts remains to complete this one: This convoy of submarine chasers covered the long leg of the transatlantic voyage in shorter time and with greater fuel economy than any outward bound detachment of chasers had done. After 20,000 miles of service the Standard engines in the chasers were in better shape than at the commencement of the European cruise. Not for one minute of the eighteen steaming days between Lisbon and New York did one chaser of the twenty-six take a tow for other than fuelling purposes.

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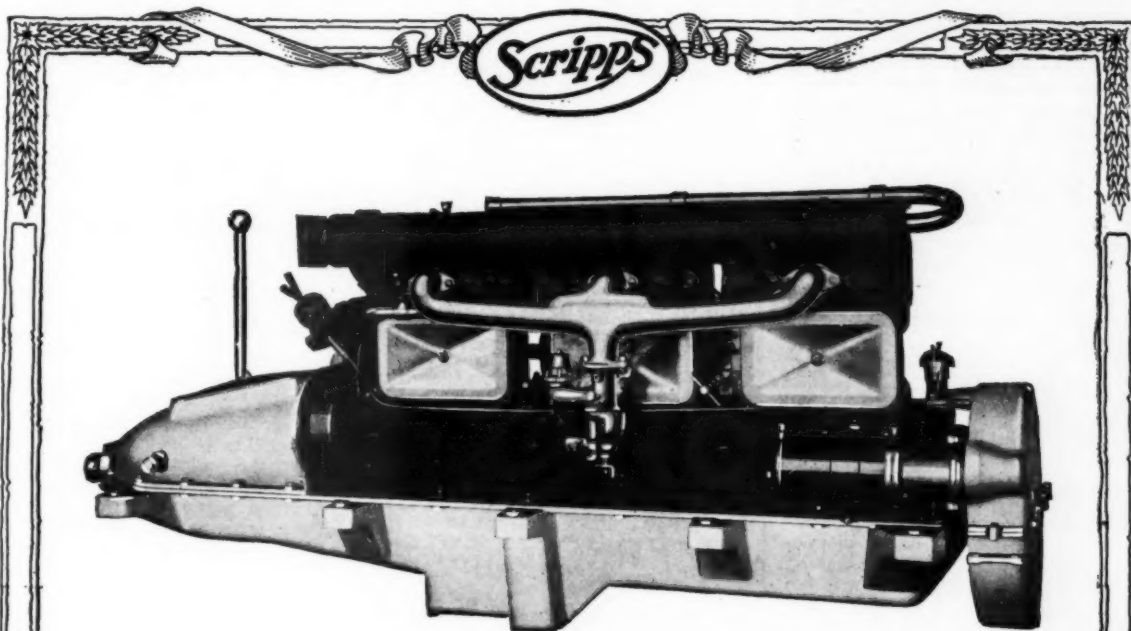


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 valves. Started in 30 seconds. Sizes 4 to
 360 B H P.

Write today for catalog

Gulowsen Sales Corp., 17 State St. New York

Cruise Races of the Delaware River Folk.

(Continued from page 16)

except for a brief stop and restore the
 lost day to Annapolis. While there a
 storm broke, holding the fleet a day and
 robbing Queenstown of that much of the
 visit. The fact that there was a day
 to spare permitted the Queenstown vis-
 it to be made and all the festivities to
 be held.

One of the features that contributed
 much to the success of the races of the
 week was the completeness of the pre-
 paratory work of the race committee
 in advance. In the previous cruise much
 of the rating and handicapping work
 was left until after the start of the
 cruise and not finished until late after
 the finish of the second and last race.
 This year all entries were made before
 the start of the cruise.

There were five races. The longest
 22 nautical miles, and the shortest 8.2
 nautical miles. When the boats rendez-
 voued at Town Point on the Elk
 River, the committee had prepared its
 racing sheets complete for the week.
 In the evening a meeting of captains
 was held ashore, and each captain was
 given a sheet of instruction showing
 the hour of starting and the course
 complete of each race, notwithstanding
 that the start and finish were in each
 case off some buoy marked on the
 chart, and likewise given on a special
 blue print furnished each captain. On
 the reverse side of each sheet was the
 time allowance of each boat for each
 race, designated as the 1st Race, 2nd
 Race, and so on.

Experience has taught the wisdom of
 starting all the races held in connection
 with the cruise from scratch. One
 boat acts as committee boat, even
 though she is a participant in the races.
 The preparatory signal is hoisted at
 a given time before starting, when the
 committee boat draws an imaginary
 line back of which the racing boats
 maneuver for position, and the com-
 mittee boat itself taking a position on
 the right from which the starting sig-
 nal is given. Thus it is a free-for-all
 start, notwithstanding that the time al-
 lowances are deducted at the finish.

This manner of starting the race
 permits all to remain together, and is
 never without interesting contests in the
 way of individual races between boats.
 It is not uncommon to see two or more
 boats hold the course bow and bow, be-
 ing fairly evenly matched although not
 being evenly matched on handicap rac-
 ing. One such instance was in the last
 race of the cruise-week when Commo-
 dore Morris of the Wilmington Motor
 Boat Club and Mrs. Sides' Lady Jane II
 had a 22-mile grind side by side, first
 one being a bow-length to the good then
 the other forging ahead, the Lady Jane
 II making a final spurt and crossing the
 line officially a split second ahead.

The matter of timing is the most
 difficult to arrange for in advance when
 the committee boat is a participant.
 Efforts were made to have the timer on
 a boat to beat the racing fleet. But

(Continued on page 62)

DIESEL OIL ENGINES

MARINE AND STATIONARY

AMERICAN MADE

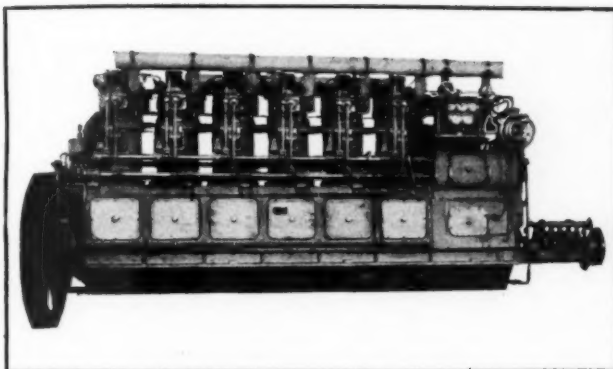
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and Motor Boats. Catalog Free. Save Money.
Order by Mail. Please state what you are
interested in.
THOMPSON BROS. BOAT MFG. CO.
1907 Ellis Avenue Peshtigo, Wis.

Cruise Races of the Delaware River Folk.

(Continued from page 60)

things will go awry. To make sure that the times were accurately taken the faster boats were given instructions to officiate at the finish in case the timer could not cross in good time. Every boat in the racing fleet had capable men aboard, who could be relied upon. This was especially true of the faster boats, so that all they had to do was to take their own time, come about and establish a line and time the boats as they crossed. This proved so satisfactory that the committee followed this plan during the entire week. It fell to the lot of Captain William Fredericks and his guests aboard to act in this capacity in all the races but one, and in that race the official timer left 30 minutes in advance in order to be at the finish line in good time.

To make a cruise and race week successful no little executive ability is necessary. There are numerous things to be taken care of, to be considered and carefully executed. In fact it is the proper execution of little things that makes the cruise and race week enjoyable. It must be borne in mind that the cruising members are gathered from here and there, and especially as concerns the women members, are total strangers. To make the cruise one continuous round of doings some one must take a hand and see first that opportunity is given to get the folks off the boats and to get them together and acquainted.

This getting them acquainted should be done at the earliest possible moment. There should be no holding aloof by anyone, and particularly by members aboard any of the flagships. There should be parties arranged ashore, either of a sight seeing nature, a dance, or a crab-feast, in fact any kind of diversion that is likely to be joined in by everyone. Experiences of the several cruises show the absolute necessity of care and forethought in this direction.

In the last cruise a fine stroke that lent success to the week was the making of arrangements for entertainment at Queenstown, Md. Soon after the cruise was planned in the winter months one of the committee made a trial as to what could be done in that direction. As a result a letter was prepared and sent to the postmaster of Queenstown, with directions to pass it over to one of the live wires of the town. This letter stated that the club cruise proposed to land at Queenstown and asked what could be done to interest the townsfolk, and as well what entertainment could be provided at no cost to them.

An early reply came which was of the most cordial kind, and which led to further negotiations, with the result that when the cruise party pulled into Queenstown harbor the docks were crowded with townsfolk who had turned out to give welcome. The local committee had arranged for a general holiday, and business was closed down practically for the day.

Advertising Index will be found on page 94

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Air drive, 3.5 H.P. for light pleasure and
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—said the Purchasing Agent of a well known Motor Manufacturer:—

"I would like to use the Paragon Gear on this engine. We know it. A Paragon Gear has never fallen down on us. We like the Gear. We like the way you folks do business.

BUT, we are building this motor to sell at a certain price and we can't afford to put on the equipment we would like to.

We realize that the equipment now supplied is not as good as the Paragon, neither is it as reliable or as efficient as your Gear.

BUT, we pay less for this Gear than for the Paragon. If we could get more money for our motor it would be different."

Rather a convincing argument as to why YOUR next motor should be Paragon-Equipt—you can't afford to have it otherwise

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EVINRUDE
Detachable Outboard and Canoe Motors
are standard. Built-In Flywheel Magnets
Automatic Reverser. See page 65 for details.
EVINRUDE MOTOR COMPANY
Muskegon, Mich.

Yard and Shop

(Continued from page 53)

the cooling water in the water jacket of his motor. Most motor boatmen make their mistake of operating their motor nice and cool instead of nice and hot. They do not realize the loss in fuel caused by the operation of a motor below its efficient temperature. There are practical limits between which a motor should operate. If it gets too hot the plugs will pre-ignite, the oil will burn and the valves warp. On the other hand if the motor is kept at too low a temperature it means that much of the gasoline is passing through the cylinders in an unburned condition and is consequently wasted. In theory, of course, the hotter the motor is the greater the economy, but it is not practicable to build motors to stand up at too great a temperature.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, Of Motor Boating, published monthly at New York, N. Y., for October 1, 1919.

Before me, a notary public, in and for the State and county aforesaid, personally appeared C. F. Chapman, who, having been duly sworn according to law, deposes and says that he is the business manager of the Motor Boating and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 443, Postal Laws and Regulations.

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher—International Magazine Company, 119 West 40th St., New York, N. Y.
Editor—C. F. Chapman, 119 West 40th St., New York, N. Y.

Managing Editor—C. F. Chapman, 119 West 40th St., New York, N. Y.

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2. That the owners are:
International Magazine Company, 119 West 40th St., New York, N. Y.; Stockholders—W. R. Hearst, 137 Riverside Drive, New York, N. Y.; M. V. Hearst, 137 Riverside Drive, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:

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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

C. F. CHAPMAN,

Business Manager.

Sworn to and subscribed before me, this

23rd day of September, 1919.

B. S. Deuse, Notary Public.

New York County.

(My commission expires March 30th, 1921.)

Advertising Index will be found on page 94

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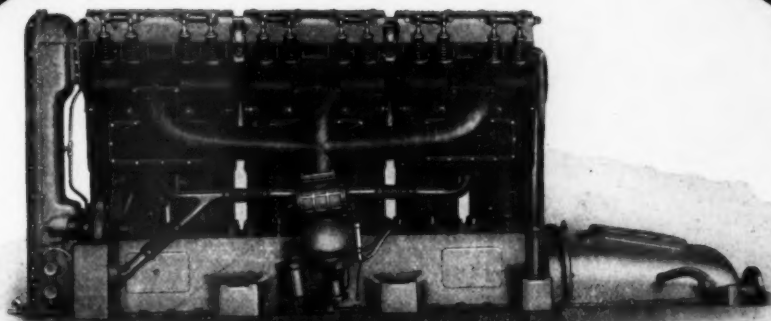
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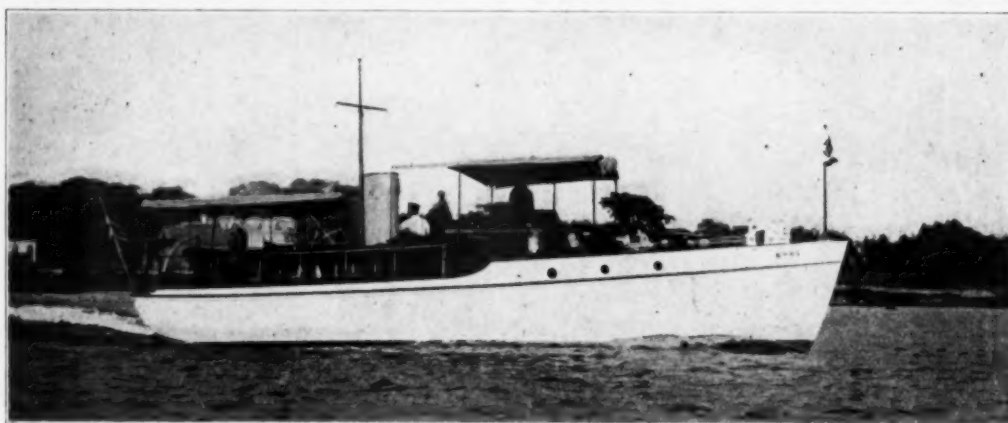


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300-400 H.P. at 1000-1400 R.P.M.

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Mr. Davis had previously owned the cruiser SINNER, equipped with M. & T. Engine No. 189, built in 1903. SINNER came into Mr. Davis' possession in 1905, and was in almost daily use until he sold the boat in 1916.

The reliability of the M. & T. engine was proven again and again. Once in particular on a trip around Cape Cod in a northeast gale, when the seas were so terrific that it was impossible to run into harbor for shelter.

Another time, while Mr. Davis had a contract for building on Penikese Island, the engine drove the boat night and day, summer and winter, seven days a week, between the Island and New Bedford.

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WILL OUTLAST THE BOAT.

Murray & Tregurtha Corp.
Atlantic, Mass.

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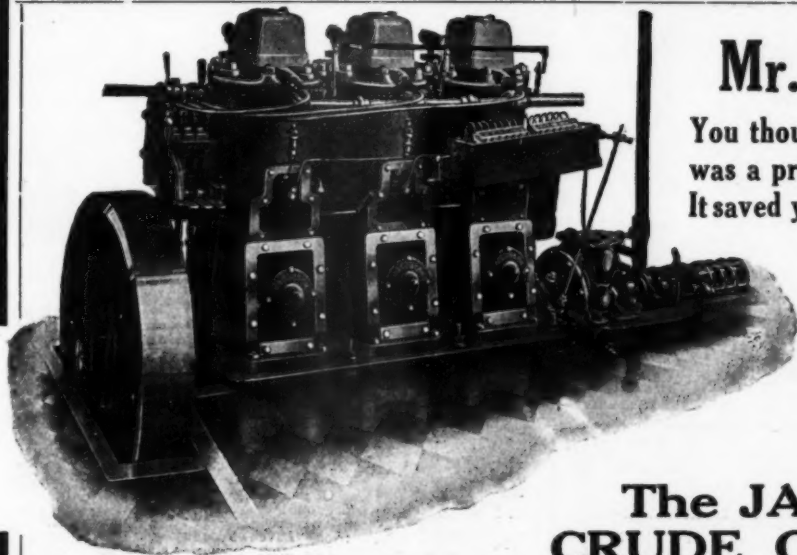
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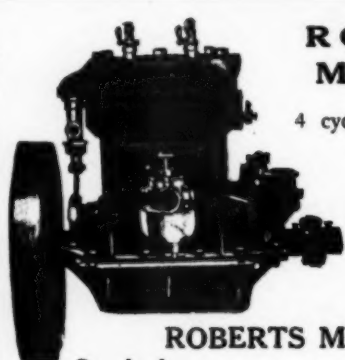
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Leak proof main bearings. Built to last a life time and will do it.

We guarantee you satisfaction or your money back.

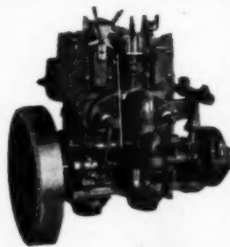
One cylinder, 6 H. P. complete equipment... \$120.00

Two cylinder, 12 H. P. complete equipment... 180.00

Three cylinder, 18 H. P. complete equipment.. 240.00

Four cylinder, 24 H. P. complete equipment.. 300.00

Superior Motor Works, Jackson, Michigan



LOOK

Can you equal these prices? Class I outfit, consisting of Bow Combination Light, Stern Light, Life Preserver Pillow, Fire Extinguisher and two tone Horn complete. Guaranteed to pass Government inspection, \$4.50.

Pol. Brass Bilge Pump..... \$2.10

12" Steering Wheel..... 1.40

Brass Fog Bells..... 1.20

Two tone pol. brass Horn..... .90

Class II Equipment, \$10.00.

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Atlantic Highlands, N. J.

TO FLAG USERS



Our customers tell us we make the best flag on the market.

They report at least 50% more service from "Raven Brand" flags.

50% more service would mean a considerable saving to you in one year.

Why not make a little experiment and get your own facts?

Get two flags of the same size, one made by us and the other the best flag you have ever used heretofore. If possible fly them on twin poles simultaneously, but if this is not practical, use them in alternate daily shifts.

We make flags for outdoor service and we are willing to have our flags judged by the amount of outdoor service they will give.

Practically every first class ship chandler on the Atlantic Coast handles "Raven Brand" flags. If your dealer does not handle them, let us know and we will send you the name of a dealer in your city who does.

BETSY ROSS FLAG CO., Inc.

Day Line Dock

Newburgh, N. Y.

CHAS. CORY & SON, INC.

New York—290 Hudson St.
Phila., Pa.—207 Market St.

ESTABLISHED 1845

San Francisco, Cal.—585 Mission St.
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Electrical and Mechanical Telegraphs.
Marine Electric Lighting Fixtures and Wiring Accessories.

Special attention given to Yacht and Motorboat electrical equipments, including fixtures, wiring accessories, bells, annunciators, push buttons, etc.

Mechanical Communication Appliances, including engine telegraphs, gongs, gong pulls, sounders, voice tubes, fittings, etc.

Complete electrical and mechanical installations for all classes of vessels solicited.



We also manufacture Universal Joints, Couplings, Stern and Thrust Bearings, Sail Ropes, Power Slips Pumps.

The Michigan Reversible Propeller Wheel

Don't take up valuable room in your boat with a cumbersome and troublesome reverse gear.

With a Michigan Reversible Propeller on your boat you are free to navigate without danger of collisions and with the same safety as with a reverse gear costing many times more. Besides this you are saved the annoyance of repairs and break-downs so often occurring with a reverse gear.

Michigan Propeller Wheels are designed and constructed for service and results. A propeller for your every need.

Write to-day for information.

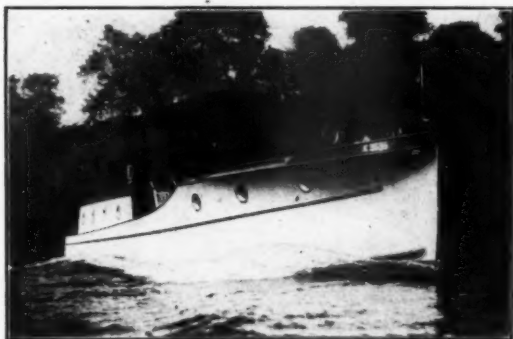
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C. J. LITSCHER, Pres.

GRAND RAPIDS

1240 Monroe Ave.

MICHIGAN



Rochester "Built Rite" Boats

are the result of years of boating experience. An evolution culminating in a line of cruisers and runabouts of exceptional excellence. We specialize in the forty footer illustrated but have most interesting designs of cruisers from twenty-six to fifty-two feet. Advise us as to your requirements and we will send full details of the boat to fit your needs.

We also build high class runabouts from nineteen to thirty-five feet.

Rochester Boat Works, Inc.

Charlotte Station

Rochester, N. Y.

Improved Motor Boat Closet

Figure 1404

Dimensions: 18 x 18 x 11" high to top of bowl; 2 1/2" cylinder. For above or below water line.

The best little closet on the market today, possessing many of the advantages of the large size toilet. All brass and porcelain. Oak seat and cover. All prices subject to market advances, which are continually changing.

THE J. H. CURTISS CO.



The J. H. Curtiss Co. Pioneer Specialists in Marine Sanitary Fixtures

Since our advertisement appeared in the first issue of *Motor Boating*, December, 1907, hundreds of Curtiss fixtures have been installed in motor cruisers and yachts of all sizes, including some of the finest boats launched within this period.

The Curtiss line is exceptionally complete, varied in type, size and price to meet every possible requirement. Each model has been designed in accordance with our wide experience in boat work and can be depended upon in quality, service and durability no matter whether it is our highest or lowest priced model.

"PRICES ON APPLICATION"

With Pump

Cock on pump swings upward, thus preventing breaking of bowl. Soap-dish is porcelain and removable.

No. 5
Height, 19 in.
Width, 19 in.
Depth Closed, 6 inches.

Quartered Oak Case, or Mahogany Case.

Lining and Fixtures Nickel-plated. Porcelain Bowl. Mahogany or Quartered Oak Case.

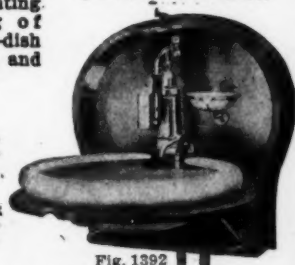
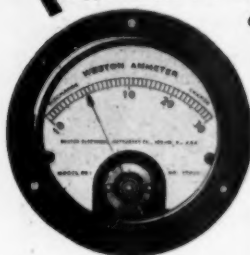


Fig. 1392

2 South Street, New York

JUST SUPPOSE THIS HAPPENED!

Your ignition failed suddenly—no lights, no spark—and you found yourself in a dangerous position. It couldn't happen if you had installed a



Weston
Model 301 AMMETER
On your Bulkhead

It tells you exactly, and at all times, the rate of charge or discharge of the battery. You know before it is too late whether your battery is being maintained in the condition which will insure you perfect service. Write us—let us tell you about it.

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America's Finest Motor Boats



Whatever you want—Runabout, Speed Boat, Cruiser, Row-boat or Canoe.

There's a **Racine Wis** Made for you

—or we will design and build one to meet your needs.

Tell us the type of boat in which you are interested and we will mail you our special catalog immediately.

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OBERDORFER BRONZE GEARED PUMPS

Are the guarantee of perfect lubrication. Without perfect lubrication your motor will soon wear out. This refers also to the cooling system.

Oderdorfer bronze geared pumps guar-

antee just the right supply of water, oil or fuel.

Write today for Catalogue.

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BRASS COMPANY**

**812 E. WATER ST
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Send for our Booklet "How to Make Your Boat Leakproof."

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IN ALL THE VARIOUS GRADES

For sale by all Yacht, Boat and Canoe Supply Houses; Hardware, Paint and Oil and Sporting Goods Dealers.

Send for Booklets—"Marine Glue: What to Use and How to Use It;" and "How to Make Your Boat Leakproof."

L. W. FERDINAND & CO.
132 Kneeland St. 305 BOSTON, MASS.



Our 1920 Marine Supply Catalog will be ready for delivery about February 1st. Send in your name so that your copy will be saved for you.

GEO. B. CARPENTER & CO.

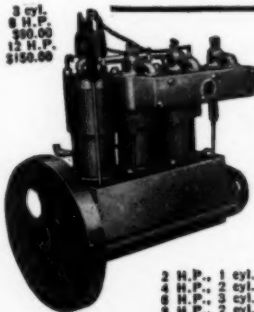
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Chicago, U. S. A.

Berling Magneto

WORTH MORE DOES MORE

3 cyl.
8 H.P. \$90.00
12 H.P. \$150.00

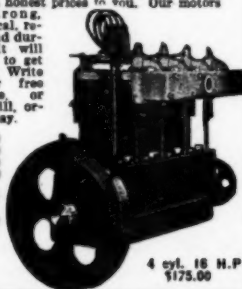


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The demand for "Dunn" Motors during 1919 will be even bigger than it has been this past year. Why? Because we are selling a line of 4 cycle engines of high grade, at honest prices to you. Our motors are strong, economical, reliable and durable. It will pay you to get a Dunn. Write for our free catalogue, or better still, order to-day.

2 H.P. 1 cyl. \$42.50
4 H.P. 2 cyl. 75.00
6 H.P. 2 1/2 cyl. 90.00
8 H.P. 3 cyl. 125.00

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16 H.P. 4 cyl. \$175.00
Dunn Motor Works
Ogdensburg, New York, U. S. A.



4 cyl. 16 H.P. \$175.00

Practical Motor Boat Handling

SEAMANSHIP AND PILOTING
(Fifth Edition.)

A handbook of information about boats and boat handling which every boat owner should know. It constitutes a complete and comprehensive but non-technical guide upon which you can rely from the time you leave your anchorage until you return, regardless of what emergencies may arise. Written by Charles F. Chapman, M. E., editor of **MoTOR BoATING**.

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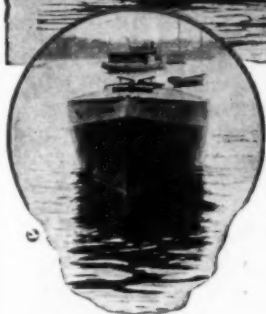
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27 Foot Cabin Cruiser



We build all sizes and types, but have made a specialty of this design.

CONSTRUCTION and workmanship is the best—equal in every respect to the high class of yacht work on which our reputation has been based for over 20 years. The lines are very fast, the launch is safe and able in severe conditions of wind and sea, and it has a large cockpit and very comfortable accommodations below decks. It is equally adapted to day service or cruising.

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EQUIPPED FOR ECONOMY AND EFFICIENCY



95%
of engine trouble in motor boat operation is due to faulty revolutions.

JONES TACHOMETER

enables you to regulate engine revolutions to the point where maximum speed and minimum cost are absolutely assured.

Motor boat owners who have installed the Jones Tachometer are its most ardent supporters, while engine experts declare it is the—

"BEST BY TEST."

Write for our New Booklet.

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More Important Than Initial Cost

—is the proven durability and low upkeep cost of Wisconsin Marine Motors. Wise boat owners are glad to pay a trifle more for an engine that will run for months without attention.

Wisconsin MOTORS

—are so carefully fitted, adjusted, run-in, tested and inspected that they are OPERATION-PERFECT when they leave the shops—READY TO RUN when installed.

—This adds to OUR cost, but ultimately the slightly higher price of a Wisconsin means LESS COST TO YOU.

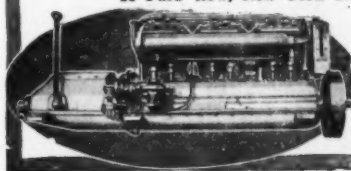
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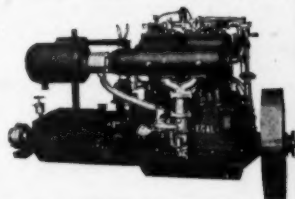
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We have a motor built specially for your boat, whether for commercial or pleasure use. They are built right to run right on gasoline, distillate or kerosene. 2 H. P. to 50 H. P., one to four cylinders—125 lbs. to 6,000 lbs.



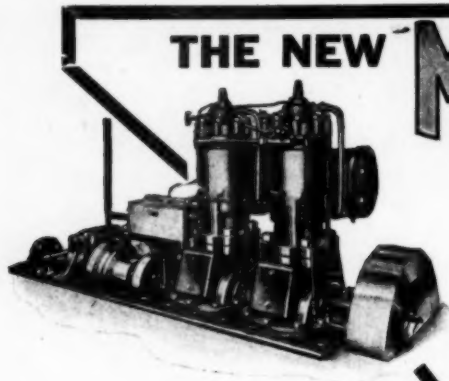
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For Yachts, Mills, Stores or Homes,

A directed connected plant, 3/4 K. W. Generator.
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Regal Gasoline Engine Company

Coldwater, Michigan, U. S. A.



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MARINE MOTORS

An Engine Combining the Diesel Principles of High-Compression Ignition with the Simplicity and Greater Advantages of a Swedish System of Fuel Injection.

HIGHEST EFFICIENCY AND ECONOMY—perfect combustion with no carbon, soot, smoke or odor. Guaranteed fuel consumption 6/10 pint per H. P. hour or better. No electrical devices—no hot plates, tubes or torches. Easy, positive starting, quiet, vibrationless operation.

SOLID FUEL INJECTION—Avoids use of compressors and high pressure valves necessary in other types.

RUNS PERFECTLY at low speeds, load or no load, with perfect ignition and combustion.

LARGE AND SMALL SIZES—The only engine of the compression-ignition type made in the smaller sizes.

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EVERYTHING IN MARINE HARDWARE

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HACKER DESIGNS AT POPULAR PRICES

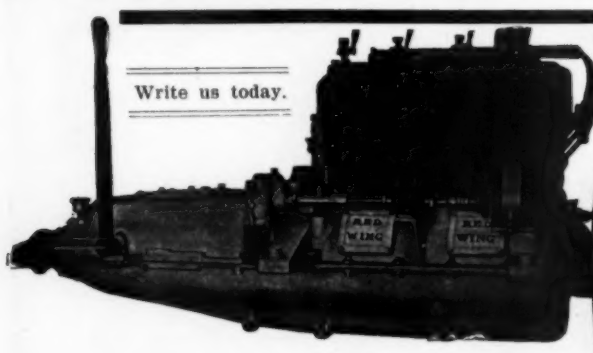
If you are going to build a boat this summer, why not build from Hacker Up-to-the-minute Plans? John L. Hacker, America's foremost designer of fast and efficient boats, has just completed a number of new plans, based on boats, built, tested and proved by Mr. Hacker, with various power plants, and fully guaranteed.

The following plans are ready for delivery: "Sea Wolf" type, family runabouts, 18, 21, 25, 30 ft. lengths. Special Speed types, 16, 21, 26 ft. lengths. "Hoosier IV" type, 28, 30, 32, 35 footers.

Special Plans to order

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JOHN L. HACKER BOAT COMPANY, 325-327 Crane Ave., Detroit, Mich.



Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE


Others' Judgment

Experienced motor owners need little persuading when the Red Wing THOROBRED is being considered. It is standard with many of the best builders of the country and its popularity is growing year by year. The buyer without experience may be sure that a motor that answers the requirements of the best boat builders come pretty near touching the mark.

Tell us what service you will require of a motor and let us send you all the details about our 4 sizes, 14 to 40 H. P. They burn either kerosene or gasoline.

RED WING MOTOR CO., Dept. B., Red Wing, Minn., U. S. A.

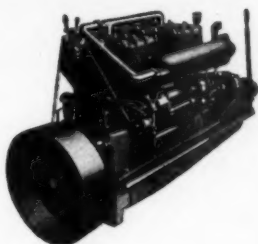
Unit Power Plant Model "P" THOROBRED
28-36 H. P. 41/16 x 5"
Furnished with or without Unit Power Plant



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We are furnishing them to some of the leading marine engine builders. Carbon and Alloy Steel. Heat Treated to your own specifications. We grind all Pins and Bearings. Forged, machined, and finished complete in our own plant. Let us quote you.



Use Cheap Kerosene Get Smooth Power

The Doman is a favorite with experienced boat owners, because it provides dependable power at low operating cost. Its Holley-Doman carburetion system gets full power from kerosene without excessive carbon or smoke.

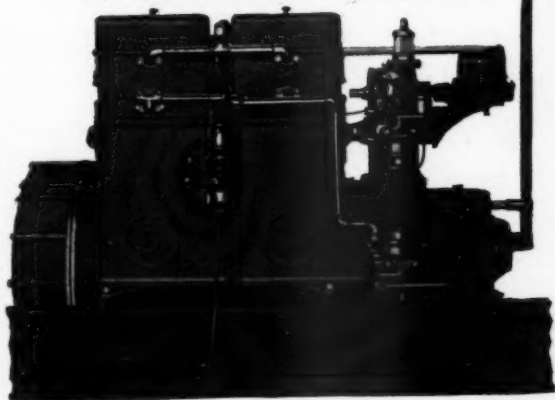
Write for details before re-engining your old boat or buying a new one.

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DUPONT MOTORS

Port View Model DF. Ready to run.



Completely Equipped—Equipment Built In. Entirely Enclosed and Self-lubricating.

Clean—Quiet—Accessible

Equipment includes Clutch and Reverse Gear; Electric Starter and Lighting System; Hand Starter; High Tension Magneto with Impulse Starter; Oil Pump; Circulating Water Pump; Bilge Pump; Air Pump.

We Guarantee Satisfaction

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19D

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It gives you complete data on:

Yale Spur-Gear Chain Blocks
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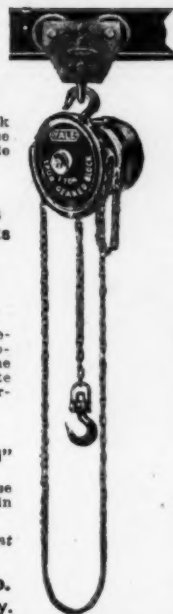
The Yale hoisting equipment described in Catalog 19D speeds up production—with increased safety to the operator. The unusually complete maintenance data is of special interest to present users.

"From Hook-to-Hook
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Ask your Machinery supply house or wire for catalog on Yale Chain Blocks and Electric Hoists.

For a Factory Locking Equipment
Use a Yale Master-Key System

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SAFETY FIRST
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FAULTY TANKS CAUSE FIRES AND EXPLOSIONS!

Protect the lives of your family and friends when motorboating by carrying your gasoline in a

"JASCO TANK"

—the tank that safeguards life and property because it cannot leak.

"Jasco" Tanks are made of the finest quality drawn steel—seamless, leakless, tinned and tested. They're endorsed by authorities—used by thousands.

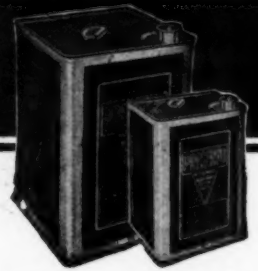
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A Canvas Waterproofing that also Preserves.



IN selecting canvas covers for marine work it is necessary, first of all, to secure covers that provide real protection—covers that are actually waterproof.

PRESERVO-treated canvas provides real weather protection and at the same time insures maximum service. For PRESERVO preserves the fabric as well as making it actually waterproof.

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TWO SIZES

6 amps. 15 volts
2 amps. 7.5 volts

A reliable battery charger for motor-boat owners

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The G-E Tungar rectifier can be installed in the private boat-house and connected to the alternating current lighting circuit. It will charge batteries quickly and without any attention while in operation. Its price is moderate and the current consumption low. It is an ideal device for the purposes for which it is intended.

Send for booklet B-3439

General Electric Company
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Don't Forget Annual Buyers' Reference and Export Number

(Regular December Issue.)

The December issue of *MoToR Boating* will be the most important reference and export number of any American marine magazine ever published. It will catalog every standard boat, marine engine and other important marine product on the American market.

In addition to all of *MoToR Boating's* regular circulation, which is more than double that of any other boating publication, copies of this issue will be mailed to every live boat builder, engine manufacturer, and yacht club,—to all American Consuls throughout the world, and to thousands of exporters, and foreign buyers throughout the world.

In both domestic and export trade, 1920 promises to be the greatest season the marine industry has ever known. Get your share of this business—through the December issue of *MoToR Boating*.

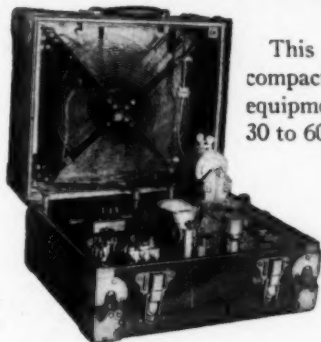
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This is our complete, compact radio telegraph equipment designed for 30 to 60 foot cruisers.

The size of this unit is 18" x 15" x 10"

It weighs only 55 pounds.

It comprises both transmitting and receiving equipment. The transmitter may be driven from the cruiser's lighting system, directly from the main power plant, or by a small gasoline engine. The receiver requires no power whatsoever. The compactness, ruggedness and simplicity of this equipment renders it an attractive investment for yacht owners.

Other equipment for larger yachts for communicating over any distance.

Keep in touch with the world while cruising.

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Engineers, Designers, Manufacturers.

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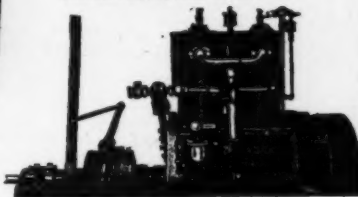


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THE ONLY SCREW HOLES IN THE WORLD



You drive the screw holes with a hammer in any material.

The screw holes are made for wood screws or machine screws to fit all sizes of screws. The head is removed and you have a permanent screw hole.

The Stine Screw Holes Co.

Manufacturers

WATERBURY, CONN., U. S. A.

DEPARTMENT 21

*The Biggest
Little Thing
in the World*

Some of the Reasons Why Screw Holes Will Be Bought and Used and Not Become Dead Stock for Anyone

- 1-They can be used without damage to receiving material.
- 2-They enable you to standardize to wood or machine screws in all material.
- 3-They are made of brass and will not rust under atmospheric or moisture conditions.
- 4-ECONOMY-They save more time value than the holes can.
- 5-You get them for nothing and are paid for using them when you count time saved.
- 6-Screw holes have been made over since the first screw was used.
- 7-Special tools are NOT needed in using them in any material.
- 8-They can be used in any place a screw can be used.
- 9-By using screw holes, screws can be used in many places, and in many materials where it is impossible to use screws without them.
- 10-These are the only ready-made screw holes in the world.
- 11-No special screws are needed. These screw holes fit any wood screw or machine screw now in stock.
- 12-They make the neatest possible job in any material.
- 13-Every store where screws are sold must carry them in stock, because the line of screws is not complete without screw holes for them.
- 14-Every shop and factory where screws are used must also have these screw holes to fit the screws.
- 15-They are ordered by all dealers in screws and by all users of screws.
- 16-Screw holes are entirely new and the world supply is yet to be furnished.
- 17-This is a progressive Old World of ours, and every active person in it must adopt all improved methods, and all new articles that will help him keep in the front line of progress.
- 18-Be among the first to stock up in screw holes if you are a dealer in screws.
- 19-Be among the first to install screw holes in your shop or factory, as you begin to save money soon as you use them.
- 20-In spite of the high cost of brass, screw holes are yet cheap.
- 21-We are letting the world know that screw holes can now be secured, by means of extensive advertising in all the principal Trade Journals that have the largest circulation among dealers in screws as well as users of screws.
- 22-Do not let your customer ask you for screw holes before you have them in stock. BE A LIVE WIRE.
- 23-They make everlasting holes in any material.
- 24-They are the result of Necessity being The Mother of Invention.
- 25-Anyone who can drive a nail can use screw holes.
- 26-Ask for a sample and convince yourself.
- 27-Mechanics who see them say, "What do you think of that?"
- 28-In fact there are NO REASONS why screw holes should NOT be used.

Each of these reasons are enough to sell Screw Holes. There are many other reasons.

Write at once for our handsome Color Card showing screw holes in various materials which will be sent on request, together with samples and price list.

GRAY-PRIOR

FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price

A Clean-Cut Power Plant

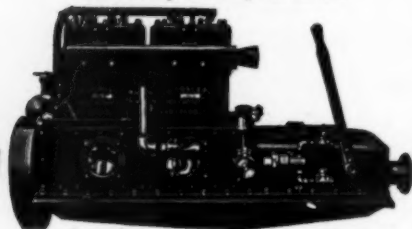
For Commercial Boats and Cruisers

Model D-4, Medium Heavy Duty

36 Horse Power Bore, 4 1/2 inches Stroke, 8 inches

Write today for full description and prices

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56 Suffolk St.
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"DAYTON"

Dynamos Switchboards Batteries

For 20 Years the Standard of the
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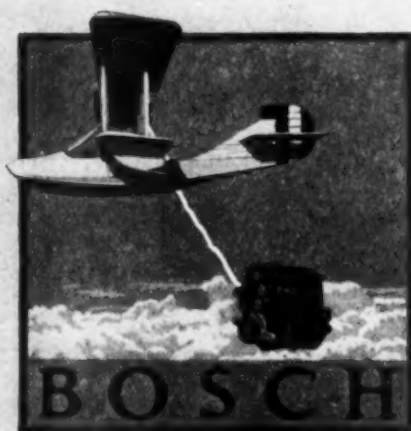
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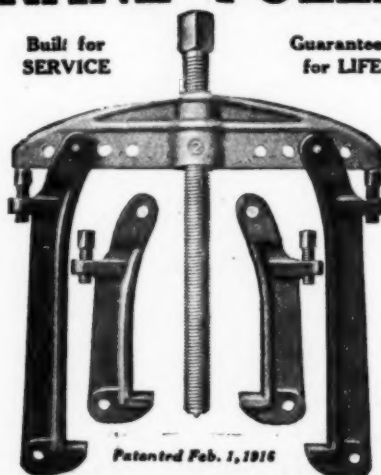
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Supremacy of Hall-Scott Marine engines was fully demonstrated by Hacker Hulls on the Detroit River.

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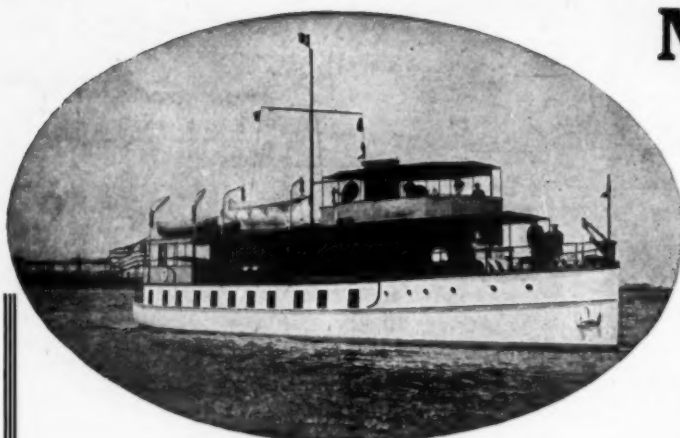
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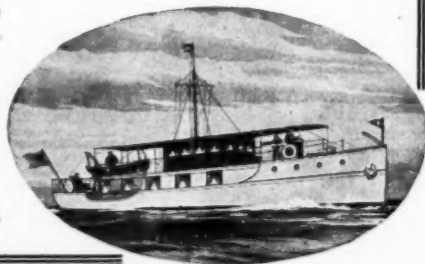
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Bargains

Bargains

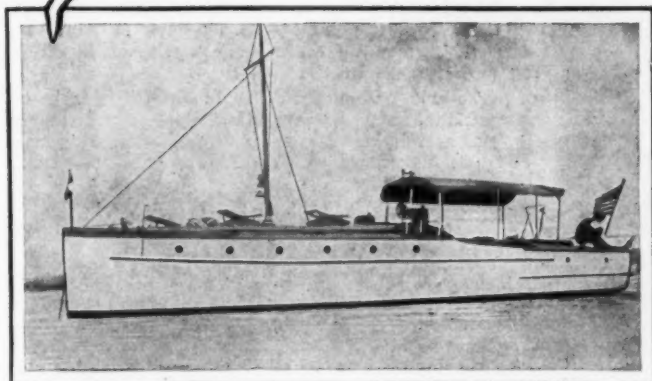
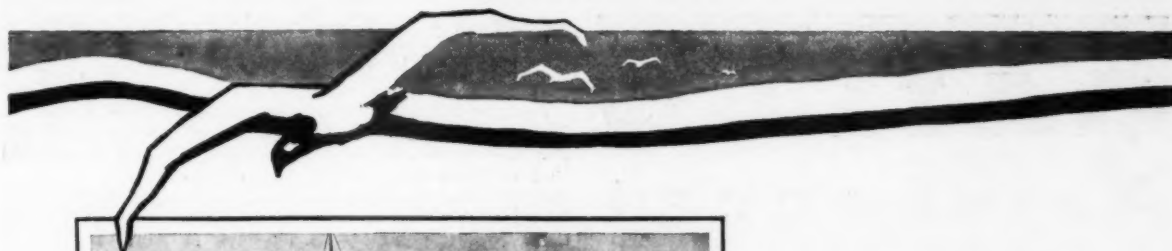
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1 EM 6 cyl R. H. $5\frac{3}{4} \times 6$	Van Blerck	\$1500
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1 C 6 cyl R. H. $5\frac{1}{2} \times 6$	Van Blerck	\$1000
2 B 4 cyl R. H. $5\frac{3}{4} \times 7$	Van Blerck (new)	\$1500 each
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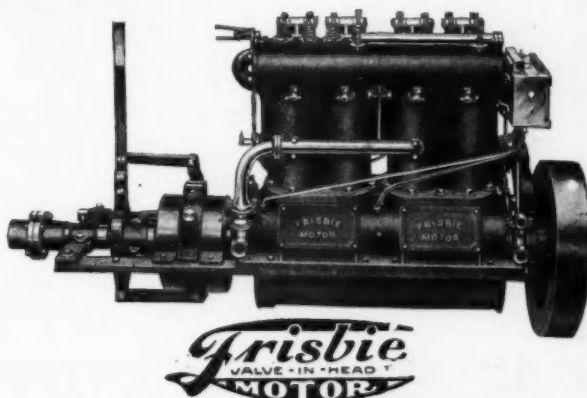


The Cruiser Marguerhea, owned by Commodore A. B. Cartledge, Philadelphia, Pa.

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—says Commodore Cartledge in describing the performance of his engine. "Over a 57 nautical mile course in rough water, the engine not only ran fine but never missed a single 'kick', and never varied over two revolutions from start to finish (r. p. m. taken by revolution counter every so often during trip)."

The Motor's utter constancy—at work or play—is the marvel of Frisbie owners, old and new. Add to this an almost utter absence of repair costs, a surprisingly low consumption of fuel and oil, and you have an ideal medium duty motor for any sort of work or pleasure boat.



Made in the following sizes, all four cycle:

1-cyl.....	5 and 7 H.P.
2-cyl.....	10 and 16 H.P.
3-cyl.....	18 and 25 H.P.
4-cyl.....	30 and 40 H.P.
6-cyl.....	50 and 75 H.P.

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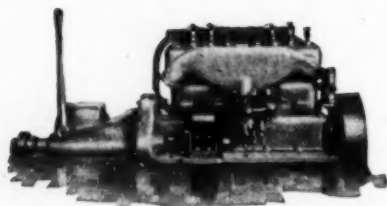


Frisbie an' I

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You never have to crank the Aristocrat. It starts with pressing a button. For it has an electric starter like those on automobiles. It even furnishes electric lights for the boat. Has four cylinders and is of the four cycle type.

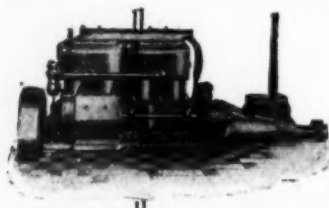
And it's the neatest, most gracefully designed motor you ever saw. Everything is fully enclosed. Nothing to catch clothing. No place where oil can splash out. It's truly the highest development ever attained in a marine motor, for the average pleasure or speed boat.

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Gentlemen:

Tell me whether the Aristocrat is suited to my hull. Dimensions follow:

Length Beam
Draft Model
Speed desired m.p.h.

If the Aristocrat is not just suited to my hull—what engine do you recommend?

Name

Address

How Fast Can a Motor Boat Go?

(Continued from page 54.)

(From H. J. Gielow of Gielow & Orr, New York, N. Y.)

Relative to the matter of a practical runabout of over 32 feet in length: I have made some preliminary investigation and studies from which it looks to me as if it would be practically impossible to design a craft of this type to make 40 miles an hour, unless in a 40 foot length, with 300 horsepower, either in a single unit or twin screw installation. Just at present I do not know of any motor that I could recommend for this work without investigating the subject more fully.

To build a runabout of 32 foot length to make this speed, would have to be something along hydroplane lines, exceedingly light construction, and fitted with some especially light, high-speed motor. A craft of this kind would be serviceable only for comparatively smooth weather conditions.

(From William H. Hand, Jr., New Bedford, Mass.)

In my opinion a 40-mile runabout is not a practical boat and probably never will be.

Never having attempted a 40-mile runabout I have no data which would enable me to give you approximate dimensions and horsepower necessary; but I do know that the boat must necessarily be very light and equipped with very high power to insure a real speed of 40 miles. It is necessary to build a boat so light and so full of power that it will be practically useless as a runabout and good only for racing in smooth water on special occasions. I place the 35-38 miles about the maximum speed for a sane and safe runabout.

(From L. L. Tripp, President of Albany Boat Corp., Watervliet, N. Y.)

I think there are two ways of looking at this question:

1st—There are no "honest-to-goodness" practical 40 miles per hour stepless runabout boats in the country today. There are perhaps reasonable grounds to doubt whether a boat measuring up to the term "practical" can be built at that speed; but such reasonable doubt does not prove that there cannot be such a boat.

2nd—On the other hand, Carl Fisher is a fellow who does unexpected things, and while I am inclined to be a little conservative I do not want to put forward any suggestions that would act as a stumbling block to the idea that Carl Fisher has in mind,—viz., to develop the highest possible practical speed in a runabout.

Looking at it from my own viewpoint, admittedly a little conservative, I do not think a man could ask to gather together for a race a finer fleet than would be attracted by the restrictions set forth for practical runabout types that could be run in any weather at a speed of 35 m.p.h., and to that end say not less than 30 feet. Offhand I should think that the development of the maximum speed would follow just as logically without restricting it to the minimum of 40 miles. Of course, I may be wrong about this.

A. P. B. A. Makes Changes in Fisher Race

(Continued from page 30.)

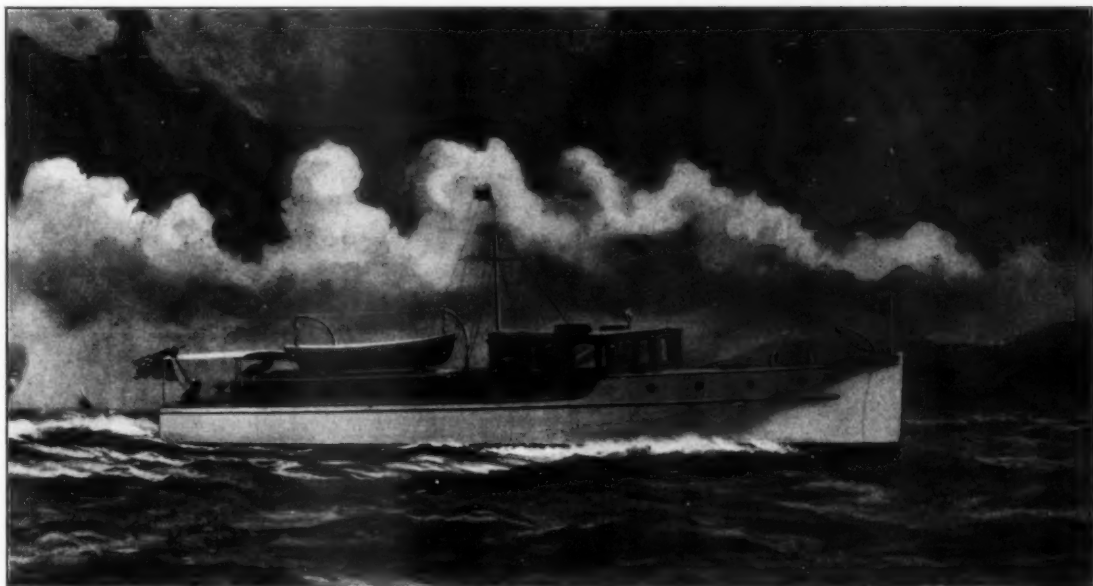
RESOLUTION PASSED AT ANNUAL MEETING PROHIBITING AVIATION MOTORS

In view of the fact that there is not sufficient data available at this moment to allow one to determine the suitability of the Liberty and other aeroplane and aviation engines for marine service, particularly for installation in boats of a wholesome character, it was voted that in the race for the Fisher Trophy in 1920, no Liberty or other aviation motor or motors not originally designed and built for marine purposes be allowed to compete in this race.

Changes were also approved making each heat 50 miles in length, permitting boats which can show a speed of 35 miles an hour to compete and making the first race at Detroit in 1920.

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THINK OF IT!



52-Foot Commuter

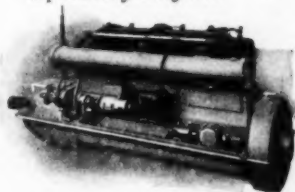
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—Our new express motor-ferry boats make commuting by water a charming digression from the usual modes of travel.

—An ideal boat for Florida.

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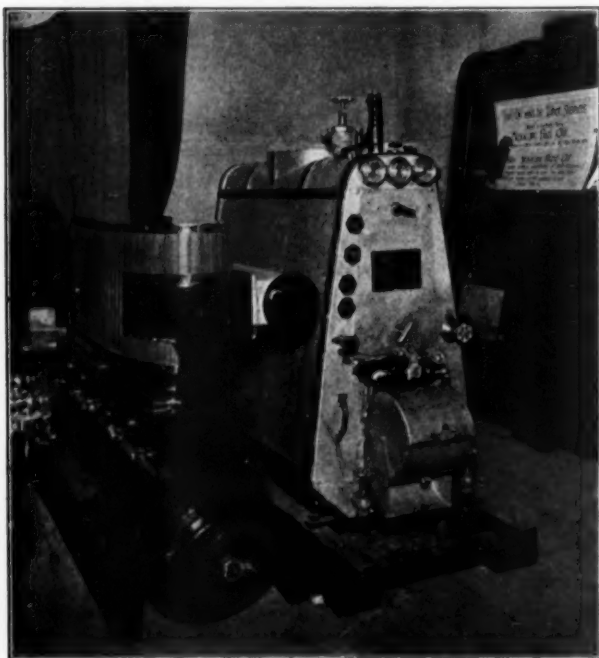
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This cut illustrates the compactness of a Talbot 50 H. P. installation. The boiler beside the engine eliminates the usual network of pipes and takes the minimum of space in the engine room.

For the commercial or pleasure boat, a Talbot Power Plant has no equal.

A 50 h. p. unit will occupy a space of only 16 square feet. This one has a power plant far more dependable than a gasoline or Diesel type engine and occupying space about the size of the former and far less than the latter.

Running cost is about one-tenth the cost of gasoline. Anything that burns will give power, but liquids are preferred.

A Talbot Steam Engine is perfectly balanced and runs without noise.

Don't decide on your power plant until you have investigated the Talbot Steam Boiler and Power Plant.

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PLANTS: PLATTSBURGH, N. Y.—MONTREAL, QUEBEC

Flags—Why and Why Not

(Continued from page 18)

vessels in fact all sea-going vessels carry the International code. The off-shore venturer who loses his bearings or who wishes to make an inlet unfamiliar to him can realize the advantage of being able to ask information and getting it correctly.

Boat flags are not playthings. They should be made for boat work and so designed by the maker as to fly so that they can be readily distinguished. Halyards should be equipped with bronze or other snaps to insure rapid manipulation. Codes should be made with space lines, snaps and rings, or at least, the flags should be as conveniently stored as the fire extinguisher and the fog horn.

No better treatise on wearing flags has been written than the chapter on flag etiquette by C. F. Chapman in "Practical Motor Boat Handling, Seamanship and Piloting." The rules for dressing ship are given in "Boat and Deck Drill" and the man who follows these authorities can be assured that as far as his outward visible signs are concerned he can look for the International code signal, Z - B - H.

New Hacker Runabout for Movie Boatman

(Continued from page 17)

winning the races for he traveled at an average speed of better than thirty-six miles an hour for the seventy-two miles. Farnum's best time was made in the final heat when he covered the distance in 36.81, the fastest speed ever attained by a motor boat in Southern California.

The remarkable part of it all is that on the night previous to the two final heats Farnum had worked until daylight completing scenes for "The Corsican Brothers."

Opposed to Farnum's Miss Los Angeles was Vanderberg Johnson's Grey Ghost, the Seattle seashed Kenupshau, Joe Fellows' Fellows III and the Cad-Hill entered by Messrs. Cadwell and Hill.

Soon after the start it developed that the seashed, also powered with a Hall-Scott motor, was to be Farnum's greatest rival for honors. Possibly had the race been run straightaway the Seattle entry would have won out, but as it happened she lost on the turns, taking considerable space and not being able to round to in the easy and graceful manner of Miss Los Angeles.

As a matter of fact the spectators were thrilled at the way in which Farnum handled his boat on the turns. Dashing down towards the judges' boats he would twirl the wheel expertly, make a hairpin turn that held the crowds breathless and start back up the stretch. Time and again his uncanny knowledge of piloting brought cheers from the spectators and when he finished up by winning single handed six out of the eight trophies offered his reception was a most enthusiastic one.

Farnum won the Nordlinger perpetual trophy, a replica of which will be given him, the B. H. Dyas Cup for the fastest lap of three miles, the George T. Cline cup for the fastest heat, a club cup for driving the most consistent race, the Commodore James W. Jump cup for taking first place and several minor trophies.

In addition to breaking records as regards speed the regatta also broke records in point of attendance. The course was well lined with boats for a good distance from the starting point. Grouped around the judges and stake boats were delegations of water craft from the Newport Harbor Yacht Club, the Los Angeles Motor Boat Club, the South Coast Yacht Club and several others. Motor cars lined the bluffs above the breakwater and bluejackets lined the rail of three battleships in the harbor.

Farnum had a most picturesque setting for his spectacular exhibition, a setting that was better than many a motion picture director could scare up for a photodrama.

Dustin Farnum in his Miss Los Angeles won all three heats. His elapsed time for the first being 40.01 at an average of 35.99 miles per hour, for the second elapsed time was 39.54 with a speed average of 36.10 per hour and for the last heat the elapsed time figured to 39.08 with a speed of 36.81 miles per hour.



35-, 30- and 26-foot Fast Runabouts de Luxe
36- and 50-foot Express Cruisers

New Boats for Immediate Delivery subject to prior sale



Albany Boat Corporation
Seventh Street, Watervliet, New York

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Motor Boat Racing Past, Present and Future

(Continued from page 9)

ment through the weaknesses shown in the motors by the extreme tests to which they have been put in these contests. The fact that the motive power has been strained to the breaking point in the effort to produce the "fastest boat in the world" has made it possible to decide where the "breaking point" was, and I believe this could have been accomplished by no other means as we have had engines which have stood all sorts of block tests without failure, and the failure point has appeared only when installed in the boat and put to the test of a gruelling race. If these points of failure have been disclosed in this way, has it not been of some benefit to the industry at least?

The fact that only one boat and engine builder in the United States has for the past few years, been the only one who has been able to build an outfit which would go through such a contest, has shown that it is possible to be done and, therefore, I regret that others have not been able to produce something which would stand this test as well as this one man, whom, as you know, hails from Algonac, Mich. He has produced each year since 1912 at least one boat which has in each year gone through this supreme test successfully without breakdown and the outfit has usually gone through an entire season's racing successfully. If he can do it, why cannot others do so? And the fact that he accomplished this apparently impossible feat to others with a Sterling engine, shows that the engine was "there", but also discloses the fact that no one but he was successful in putting it into condition to stand these hard tests and keep it standing up for a season. He always did this, I believe, with one engine as in all of the other races the engines of the same character failed somewhere. Now, if he could do it with one engine, certainly it could be made to be done with others and that is the fact which I consider more deplorable than any other connected with the industry. Last year the same man, as you know, took a Curtiss aeroplane engine and this year a Liberty motor and so rebuilt and reconstructed them that they went through the races successfully without a breakdown and made extremely fine records.

I believe and know, as a matter of fact, that this one man's success in all these long years of being able to construct an outfit which does go through these races successfully without breakdown and that no one else is apparently able to do so, has more to do with the failure of hydroplane racing than any other one thing; the others, I believe, have become discouraged—in fact, I may be almost put in that class myself, because I have left no stone unturned or that could be foreseen for a number of years, and I need hardly add have spared no expense—which has been very considerable—to produce a boat that would stand up as well and go as fast, and the fact that I did get over 70 miles per hour out of the "Whip-po'-Will, Jr." is evidence of that fact. That the motive power in my boat has failed at critical times is due, I assure you, to no lack of effort, labor, attempt, foresight or expense on my part or others who have been associated with me in that work.

While, of course, it is a matter on which I have a "bug", nevertheless I must say that a large part of my effort has not been solely for the personal gratification that I might get from my experience with these boats and the effort to win the Trophy but has been in the hope that I, in some way, might help the object for which the American Power-Boat Association is formed—and that is, the development of the boat and the engine, and I have thought at times that some part of my efforts have been successful toward this end; perhaps I am mistaken in this respect but I certainly hope not.

At present I seem to have in the Van Blerck engine spoken of one of their large 12-cylinder engines supposed to develop over 600 h.p. at 2000 r.p.m., and while fundamentally a Van Blerck, was practically rebuilt in the way that the Algonac man rebuilds his Sterling and others, and on which we have spent what we considered was the best thought and experiment of the best men we could find.

Mr. C. Harold Wills of Detroit, was associated with me in this effort and Mr. Wills spent a large amount of his time and money in experiments looking to the development of this type of engine. We succeeded up to two points: The engine is a perfect success in every way, with the exception of the valves and valve springs. Possibly the cam-shaft has something to do with the failure of these two. There is apparently no metal that can be manufactured out of which these valves can be made which will stand the strain and heat produced by this motor at 200 r.p.m., therefore there is something mechanically wrong which no one has ever been able to discover. The engine is as fine a piece of work and operates as beautifully as could be desired as a speed up to 1500 r.p.m., but the strain begins to increase so rapidly above that point that we fail at the desired speed at 2000 in the respects enumerated. Please do not think that I am trying to "boom" the Van Blerck engine. I am simply citing my experience with one engine which I believe is in some way connected with the failure of all of the others at some vital point.

Now, in the contest for the Fisher Trophy, Mr. Fisher insists, rightfully, in relation to motive powers to be put into the boats, that none but stock marine motors shall be used, and he expresses it in the following terms:

"You are going to have a great cry for the admittance of second-hand, rebuilt Liberty motors with miscellaneous transmission outfits tied on to them, hooked on to them or bolted on to them. The entire object of the race will be defeated if light, flimsy engine outfits are even considered. We will stoutly stick to the clause that standard stock marine motors are to be a part of the equipment."

At the meeting of the Council of this Association held in New York recently, it was suggested that an amendment be made to the Deed of Trust of the Fisher Trophy that a minimum weight of the entire outfit—boat, engine and accessories—be made so as to prevent a flimsy outfit from being constructed and competing in the race and thus destroying the intent of the objects to be obtained by the Fisher Trophy. There may be other suggestions which might prove to be necessary or amendments to be made. Mr. Criqui is extremely interested in this race and had a talk with Mr. Chapman about it. Of course the first year's experience with this race will probably develop some modifications which we cannot foresee, but in general, we hope and believe that this contest for the Fisher Trophy will develop something really worth while and mark an advance in the boat and marine engine building which will be a great step forward in the industry and well worthy of more careful attention and study on the part of engine and boat builders, as well as others who may be interested in the sport.

(Letter from Mr. G. A. Wood, owner of the Miss Detroitis and Gar Jr., to C. F. Chapman, Editor of MoToR BoatinG.)

Knowing as you do that I enjoy a boat race of any kind and especially so when I can participate in the race and assuring you that I am particularly interested in the development of speed in all kinds of boats and in the development of motors for marine purposes, I want to ask you if in your opinion Mr. Carl Fisher is doing the right thing in placing so many limitations on his trophy in his Deed of Gift.

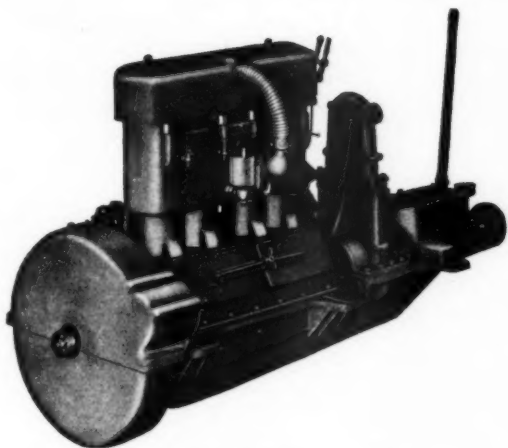
I understand to qualify, the boat has to be over 32 feet in length, must demonstrate a speed of 40 miles or better, that the piston displacement must not exceed 3,000 cubic inches, and that the weight of the motor or motors in their combined weight must not be less than 3,000 pounds, and that it must be a standard marine motor and not an aviation motor. The hull must be stepless and may be any beam that the designer may see fit to use.

My idea of a marine motor and one that I would care to purchase for a pleasure boat would be a motor which would require practically no attention, with as light a construction possible to build and still have a motor which

(Continued on page 90)

NEW GRAY MOTORS

3½ x 5 MODEL VM—10 to 25 H. P.



This new model "VM" Gray 4 cycle motor marks an epoch in Marine Motor history. In this motor is embodied the results of the most modern gasoline motor practice and backed by an old established motor building organization and its experience. Note carefully the features that give this engine character. First, let us examine carefully into the

Crank Shaft

A good crank shaft is the beginning of a good motor. If your crank shaft is small and badly designed there is no use of trying to build a good motor around it. Compare the "VM" crank shaft diameter and length of bearings with every other motor of similar bore and stroke on the market. Next, in fact equally as important is

Bearings

The bearings on the "VM" are not only large interchangeable and made of the best material obtainable, but are BRONZE BACKED, the same type of bearing as used in the famous Liberty Aeroplane Motor, and have nearly 50% more bearing surface than the average of the V. M. S. competitors. It took a lot of nerve to lay aside so good a motor as our former model "D" and substitute a new one, but we feel that we must keep one motor up to date and give our customers the best there is. So analyze our

Lubricating System

The force feed to all main bearings and to troughs for lubricating the connecting rod bearings by splash with a pressure indicator to tell you at all times if your pump is working properly.

Overhead Valves

This is the day of overhead valve motors. All the aeroplane motors—also the Reo, Marmon, Chevrolet, Buick, Nash and a host of others have adopted the overhead valve—it is more efficient, more powerful and more accessible.

Back-firing

This motor cannot backfire and set fire to your boat.

Kerosene or Gasoline

All gasoline now is poor stuff, the motor designed five or six years ago uses it, but not satisfactorily, it takes a different design of intake to properly use this low grade fuel. Our HOT SPOT cylinder head uses not only gasoline of the poorer grades but even kerosene and gives absolute control, flexibility and a clean motor.

Fly Wheel Enclosed

if you want it so, or not—as you choose.

Power

Our overhead valve, special timing system, Hot Spot manifold and excellent workmanship and design produce a power result that is most remarkable. Study our power curve.

Standard Electric Starters

fit the job without cutting or fitting.

A New Model 4¾ x 6

This new 4 cylinder, Valve-in-head 35-45 H. P. motor now ready for delivery. Write today for literature.

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GRAY 2-CYCLE MOTORS

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STANDARD the World over.

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MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to their favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical hand-books, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfits, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom vs. Sharp Bilge; What are the Advantages of Flare? Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantages of Bilge Keels; Open or Solid Deadwood? What Make a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman sometime or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice-Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screens for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it; Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why do Boats Squat? Figuring the Boat's Speed; Ballasting the Cruiser; Getting Off Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on a Cruiser; Diminishing Deviation; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power per Cylinder; High Speed vs. Heavy Duty; Long Stroke vs. Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Banker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers vs. Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbiting a Worn Bearing; Should Fuel Line be Inside or Outside.

Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carburetor, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tanks; Cleaning the Gasoline Line; Stopping Up the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedying Leaky Compression; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

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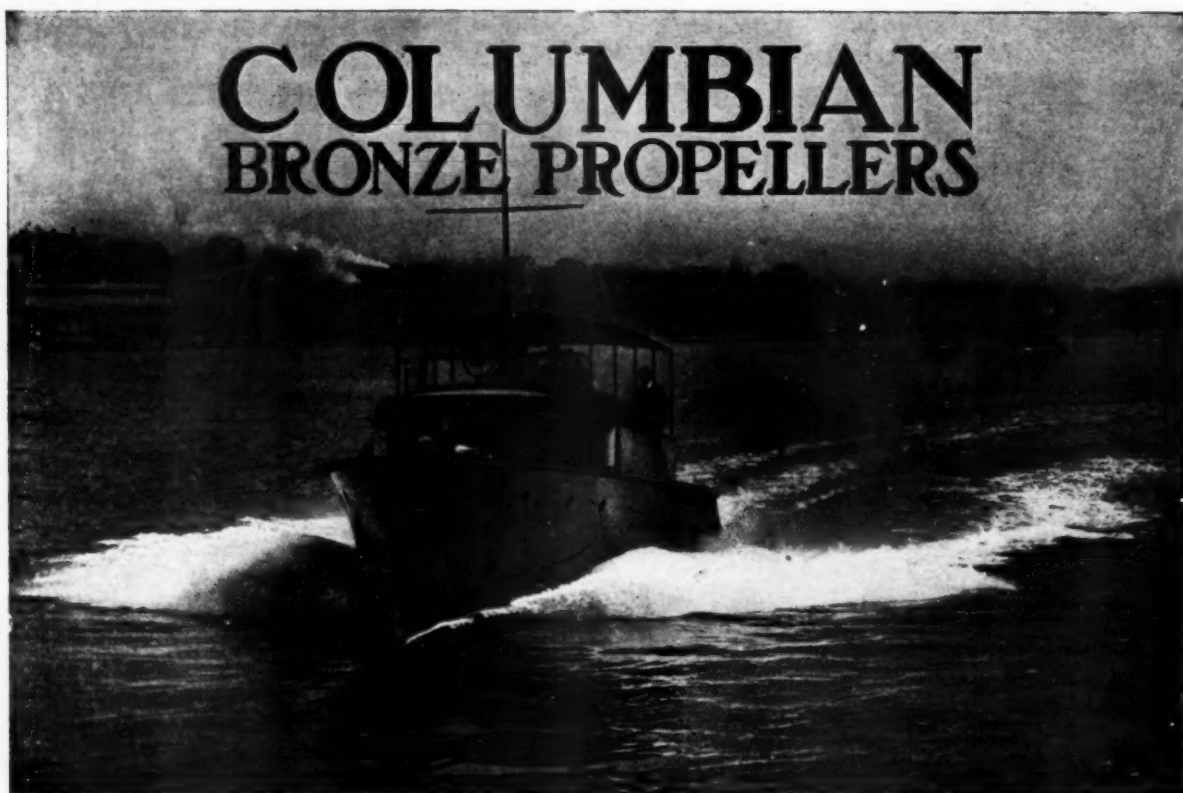
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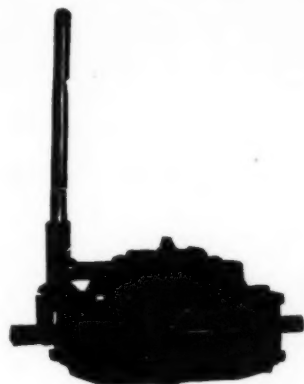
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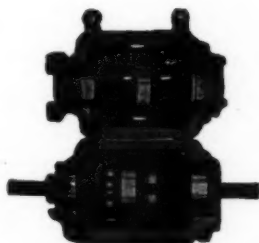
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Motor Boat Racing Past, Present and Future

(Continued from page 84)

would drive my boat the greatest number of miles on the smallest consumption of gasoline and cylinder oil, and above all a motor which had been in practical service long enough and have proven reliable enough so that my mind would be well at ease as far as the motor was concerned, when starting out on a drive across a large body of water to demonstrate the qualifications of an engine of this kind. The only limitations I would put on the motor would be the piston displacement, standardization and an endurance test. In other words, the race would be for a distance of possibly 200 to 500 miles instead of the short distance that they now run and the course would be laid out so as to encounter open water such as one would encounter in the ordinary daily runs.

My understanding as to why Mr. Fisher offered this wonderful trophy is that he was disappointed because the races were not held on time on account of bad weather etc., and I believe he made the statement that what he would like to see was a boat capable of negotiating in bad weather at high speed, a boat safe to ride in, one where there was some comfort, in rain or shine, smooth or rough water. I am well satisfied that up to the present time there is only one boat in this world that can qualify in these last particulars and you have ridden in this boat and are quite as familiar with its qualifications as I am.

The question in my mind just now is what Mr. Fisher is trying to get at. If I were to offer a trophy I would offer it for the lightest motor and lightest hull possible to construct which would stand all the tests it would be put to in a race or in everyday service.

I hope if you have anything to do with the drawing up of the Deed of Gift governing the Fisher Trophy that you will offer inducements for speed, seaworthiness, comfort and lightness and engine durability most possible to develop or obtain. I am going to compete for the Fisher Trophy if possible and am going to win if possible but if a heavy motor which weighs at least 3,000 pounds must be used, I positively will not compete and I am afraid there will not be much competition for this trophy.

Mr. Chapman's Reply to Mr. Wood

Several points you have brought out in reference to the Deed of Gift make me believe that you have been misinformed in regard to these points. The Deed of Gift as tentatively adopted, was published in the August issue of *MoToR BoatinG*. However, the Deed of Gift will probably need changing somewhat at the annual meeting of the A. P. B. A. and having the rough edges smoothed off. In the Deed of Gift, there is no mention whatsoever as to the weight of the motor. One may use as heavy or light a type as he desires provided it is a stock marine model.

Whether we are justified in placing so many restrictions on the boats to compete for the Fisher Trophy is an open question which is subject to much discussion. Everyone of course has a right to his own viewpoint but the whole subject now is down to the fundamentals of racing.

I agree with you that if the intent and desire was to obtain the fastest runabout possible that there should be absolutely no restrictions whatsoever except perhaps a maximum piston displacement limitation. This would allow the owners and designers to go the limit to obtain extreme speeds. It seems to be the idea of many people, particularly some of the boat builders and naval architects, that the one intent of Mr. Fisher's offer is to obtain the fastest runabout possible with a motor of 3,000 cubic inches. I can say with authority that such is not the intention of this race, in fact extreme speed is one of the minor points.

Just a word here as to the reason why the restrictions which have been placed on this trophy were decided upon, may be of interest. You are of course so familiar with the status of hydroplane racing in this country at the present time that it would be unnecessary to go into the subject at all. However, you will admit it is a fact that you are the one and only man in this country at the present time who owns a successful hydroplane. This is a rather bold admis-

sion to make but it is a fact and no one can deny it. Hydroplane racing will always endure as I look at it. There always will be Gold Cup races with hydroplanes competing for we must have some class for boats without restrictions as to power, size, design, etc. This is the sole object of the Gold Cup Races—that is, to develop extreme speed irrespective of everything else. A certain number of men will always exist, although this number will always be small, who desire to own the fastest boat in the world. For this class of men and this kind of racing, it would be improper to place any restrictions whatsoever on obtaining the fastest speed in the world.

A few years ago, when hydroplane racing was at its zenith and we had fourteen or fifteen boats entered in the Gold Cup Races and practically all these were owned by eastern enthusiasts, there was much agitation to place restrictions on the Gold Cup Races and the Gold Cup boats to insure better racing, fewer break-downs, less danger, etc. We gave this matter of restriction on the Gold Cup boats much thought and attention and even suggested changes at one annual meeting of the A. P. B. A. However, many of the racing men at that time objected to restrictions on the Gold Cup boats and came forth with sound and sensible arguments exactly similar to those which you raised in your letter about the Fisher Trophy. We gave weight to these arguments and decided that inasmuch as the Gold Cup represented the fastest boat speed in the world, we should let every boat "go to it," so to speak, and therefore decided that there would be no restrictions whatsoever placed on the boats in the Gold Cup races as regards power, design, type of motor, etc. On the other hand, there were those enthusiasts at that time who came at us with the statements that if restrictions were not placed on the Gold Cup boats, it would eventually kill hydroplane racing from a sport standpoint and cause the Gold Cup races to be mere events without competition or importance.

Now that five or six years have elapsed since the above prophecy was made, we have had time to analyze and study the hydroplane racing situation and we find that this prophecy has practically come true. At any rate, the easterners who used to own all the fastest racing boats that competed in the Gold Cup races have entirely lost interest and dropped out of the racing game. These are the men who had years of experience in owning fast boats and the fact that they refused to be interested any longer shows, to my mind, that something must be wrong somewhere.

Personally, I do not believe for a minute that restrictions should be placed on the Gold Cup races but I do believe that more classes should be provided so that those persons who are not interested in the type of boats which can logically compete for the Gold Cup may build boats to their liking and of a type and size and power which attracts them and still have a chance to compete against similar boats and have an equal chance to win. Thus the one and basic idea of the Fisher Trophy race is not to compete in any way with the Gold Cup races but to provide a class for the man who is not interested in hydroplanes or hydroplane racing. This man is not interested in extreme speed and the minute we permit boats to compete of any size and type, whether they be good boats or bad boats from his point of view, makes no difference yet this man immediately throws up his hands, loses interest and we again bring racing down to a condition where only one or two men in this great country of ours, become interested.

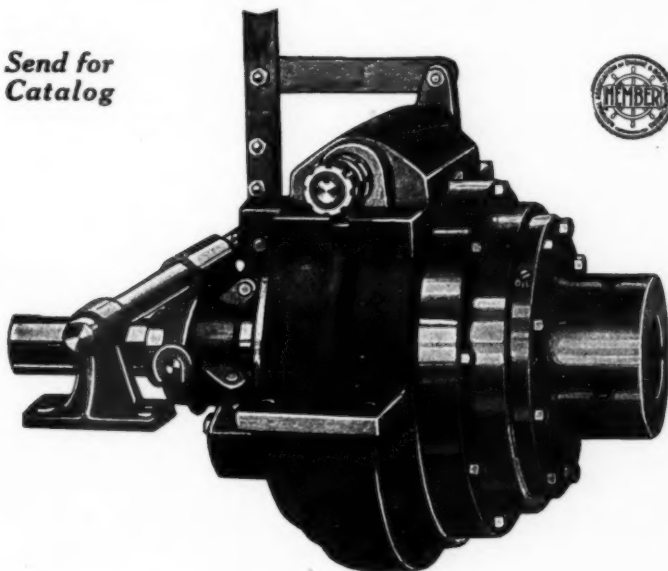
In reference to the type of power plant; there can be no arguments but that the Liberty motor as used in your boats this year, is a decided success in every sense of the word. There has been no more successful boat brought out than Gar, Jr., and your remarks about the perfect performance of the Liberty engine in Gar, Jr., are justified. However, yours is somewhat of a special case and you are so situated that you are able to develop the Liberty motors from their airplane characteristics and transform them into a type which will be serviceable for marine purposes. On the other hand, there are few if any people in the country who are placed in a similar situation.

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The December Issue of MoToR BoatinG will be the Annual Buyers' Reference and Export Number

This is our most important issue, the BIG number of the year, and is practically a complete catalog of the marine market. It is a history of the past, a record of the present, and a forecast of the future, which is invaluable alike to the boat owner, dealer, builder, exporter, architect and everyone else interested in boats or boat business. About one hundred newspapers throughout the United States will carry advertisements of December MoToR BoatinG.

Why the Annual Buyers' Reference and Export Number—the December Issue of MoToR BoatinG will be of inestimable value for at least a year to

READERS

Complete lists of American marine engine manufacturers, giving address and types and models made by each.

Table 1. Manufacturers of two cycle engines.

Table 2. Manufacturers of four cycle engines.

Table 3. Manufacturers of Diesel and heavy oil engines.

Table 4. Manufacturers of outboard motors.

Specifications of every American marine engine, listed according to horse power, number of cylinders, bore and stroke, R. P. M., weight, ignition, etc.

Table 5. Specifications of two cycle motors.

Table 6. Specifications of four cycle motors.

Table 7. Specifications of Diesel and heavy oil engines.

Table 8. Specifications of outboard motors.

Tables of boats of standardized design for 1920, giving principal specifications.

An article on the proper power plant for different types of boats, illustrated with photos of typical engines.

Articles on the history and trend of design in engines, reverse gears, ignition devices and other equipments.

Plans of typical boats of all sizes designed by the foremost naval architects. These will include successful boats of the past season and new designs for 1920.

Trade conditions in the marine industry will be analyzed by a prominent manufacturer.

Illustrations and an article on the trend and development of commercial engine and boat design which will probably be written by an expert in this line.

An article on paints and varnishes will show the importance of these products in marine use.

An article by B. Olney Hough, Editor of the American Exporter, who has been traveling abroad for several months.

All these are in addition to the regular contents of MoToR BoatinG.

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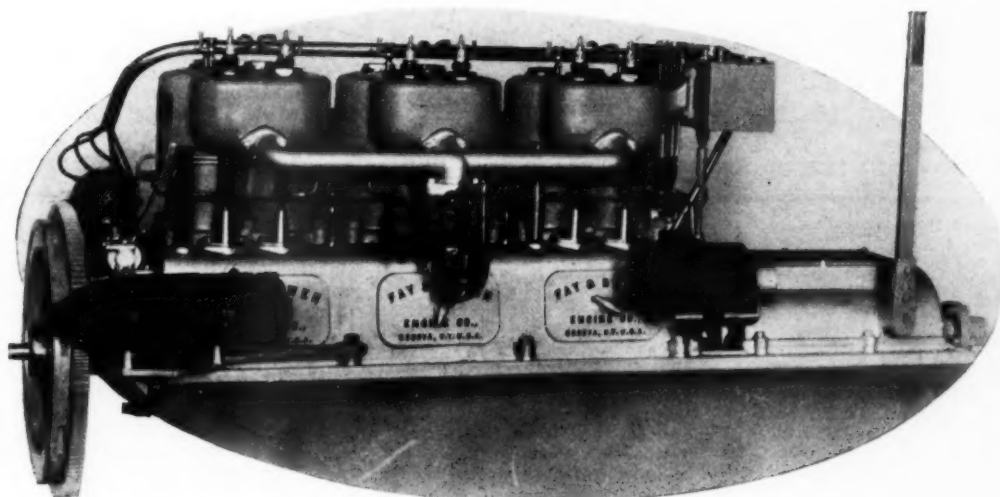
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MoToR BoatinG Advertising Index

A		P	
A. C. Electrical Mfg. Co.....	76	Palmer Bros. Engines, Inc.....	58
Aerotherust Engine Co.....	62	Paragon Gear Works.....	63
Albany Boat Corp.....	83	Purdy Boat Works.....	60
American Bosch Magneto Corp.....	76	R	
Anderson Engine Co.....	64	Racine Boat Co. (Racine).....	70
Atwater Kent Mfg. Co.....	56	Red Wing Motor Co.....	72
B		Regal Gasoline Engine Co.....	71
Badger Motor Boat Co.....	62	Richardson Boat Co.....	62
Baldrige Gear Co.....	62	Roebbling's Sons Co., John A.....	64
Betsy Ross Flag Co.....	68	Rochester Boat Wks., Inc.....	69
Blood Bros. Machine Co.....	64	Rock-A-Way Pump Co.....	56
Blue & Queripel Co.....	62	Roberts Motors.....	68
Bowes, T. D.....	53	Robeson Preservo Co.....	74
Brooklyn Varnish Co.....	62	S	
Brooks Mfg. Co.....	64	Safety At-Sea Corp.....	56
Bruns Kimball & Co., Inc.....	50, 51, 53	Sandusky Boat & Cabinet Works.....	58
Buffalo Gasoline Motor Co.....	1	Sanford, Harry W.....	47, 53
Burger Boat Co.....	62	Scripps Motor Co.....	59
Burroughs Tool Co.....	62	Sea Sled Co.....	95
C		Sherman, E. M.....	58
Caille Perfection Motor Co.....	80	Sims, A. V.....	56
Cape Cod Power Dory Co.....	64	Snow & Petrelli Mfg. Co.....	91
Carlyle Johnson Machine Co.....	89	Sonora Phonograph Sales Co., Inc.....	62
Carpenter & Co., Geo. B.....	70	Standard Motor Construction Co. 2nd Cover	
Central Mfg. Co.....	58	Standard Oil Co.....	58
Champion Spark Plug Co.....	87	Stearns-McKay Mfg. Co.....	68, 71
Chandler Dunlap Co.....	60	Sterling Engine Co.....	3rd Cover
Classified Advertisements.....	49-52	Stine Screw Holes Co.....	75
Clay Engine Mfg. Co.....	60	Superior Motor Works.....	68
Coes Wrench Co.....	56	Sutter Bros.....	53
Columbian Bronze Corp.....	88	T	
Commonwealth Motors Co.....	62	Talbot Engineering Corp.....	82
Consolidated Shipbuilding Corp.....	81	Tams, Lemolne & Crane.....	44
Chas. Cory & Sons.....	69	Tebo Yacht Basin Co.....	4th Cover
Cox & Stevens.....	42, 53	Thompson Bros. Boat Mfg. Co.....	62
Crane Puller Co.....	76	Tillinghast Products Corp.....	58
Curtin Corp., John.....	64	Toppan Boat Mfg. Co.....	60
Curtiss Co., J. H.....	69	Topping Bros.....	72
Cutting & Washington Radio Corp.....	68	Trego Motors Corp.....	62
D		Trimount Rotary Power Co.....	49
Defoe Boat & Motor Wks.....	62	U	
Delaware Marine Motor Co.....	73	Universal Motor Boat Supply Co.....	68
Devoe & Reynolds Co., Inc.....	62	Universal Motor Co.....	58
Domestic Eng. Co.....	58	V	
Doman Co., H. C.....	73	Valentine & Co.....	41
Dunn Motor Works.....	70	Van Blerck Motor Co.....	4, 52, 78
Durkee & Co., Inc., Chas. D.....	68	W	
E		Watts, J. Murray.....	53
Edwards Engineering Co.....	53	Weston Electrical Instrument Co.....	70
Egyptian Detties.....	55	Wicker-Kraft Co.....	56
Elco Co.....	2nd Cover	Willis Co., E. J.....	64
Ericsson Mfg. Co.....	70	Wireless Specialty Apparatus Co.....	75
Evinrude Motor Co.....	64	Wisconsin Motor Mfg. Co.....	71
F		Woolsey Paint & Color Works.....	64
Farley Co., Edward P.....	48-49	World Battery Co.....	56
Pay & Bowen Engine Co.....	93	Wolverine Motor Works.....	56
Ferdinand & Co., L. W.....	70	Wyman-Gordon Co.....	95
Flexlume Sign Co.....	60	Y	
Frisbie Motor Co.....	79	Yale & Towne Mfg. Co.....	73
G		Youngs & Bros., W. P.....	64
Gardner & Co., Wm.....	45	Z	
Gardner, Elliott.....	53	Zundel Co., Inc., R. W.....	64
General Electric Co.....	74		
H			
Hacker Boat Co., John L.....	72		
Hall-Scott Motor Car Co.....	77		
Hall Co., W. S.....	56		
Hamilton Marine Eng. Exchange, Inc.....	53		
Hand, Jr., Wm. H.....	53		
Harley Co., The.....	60		
Herfurth Engine Co.....	60		
Hyde Windlass Co.....	55		
I			
Jacobson Engineering Co.....	67		
Janney Steinmetz & Co.....	73		
Jennings Co., H. H.....	46		
Jones Motrola, Inc.....	71		
K			
Kermath Mfg. Co.....	3		
Knox Motors Associates.....	60		
Koban Mfg. Co.....	62		
L			
Lawrence & Co., L.....	62		
Leece Neville Co.....	64		
Leelle Co., A. M.....	58		
Lipman Mfg. Co.....	58		
Lockwood-Ash Motor Co.....	60		
Lord, Frederick K.....	53		
Luders Marine Construction Co.....	68		
Lunkenheimer Co., The.....	62		
M			
Marine Compass Co.....	60		
Masten Co., Inc., G. H.....	75		
Masters Mfg. Co.....	60		
Mathis Yacht Building Co.....	78		
Matthews Engineering Co.....	64		
Mianus Motor Works.....	72		
Michigan Wheel Co.....	89		
Miller Engine Co.....	56		
Moto Meter Co., Inc., The.....	67		
Mower, Chas. D.....	53		
Mullins Co., W. H.....	60		
Murray & Tregurtha Co.....	65-66		
Muskegon Motor Specialties Co.....	60		
N			
Naval Architects & Yacht Brokers.....	53		
Navy Department.....	53		
Neponset Eng. & Mach. Co.....	64		
New Jersey Paint Works.....	58		
New London Ship & Engine Co.....	61		
New York Yacht, Launch & Engine Co.....	2		
New Process Chemical Co.....	64		
Nock, Frederick S.....	53		
Norma Co. of America.....	5		
O			
Obenberger Forge Co., John.....	62		
Oberdorfer Brass Co., M. L.....	70		

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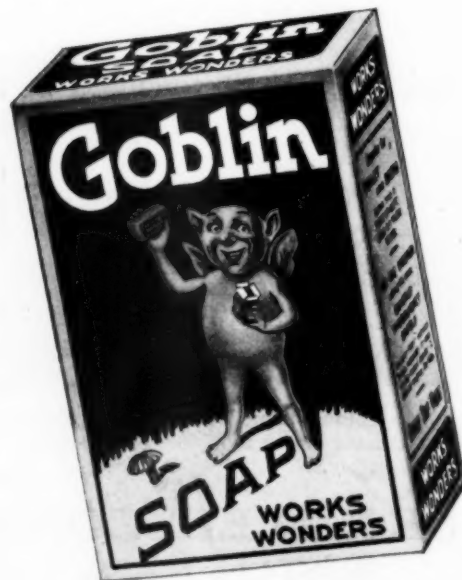
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